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THE

ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY IN ALL ITS BRANCHES

VOLUME I

1893

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"It is interesting to look at one of the magnificent exotic species, or, indeed, at one of our humblest forms, and observe how profoundly it has been modified, as compared with all ordinary flowers."

CHARLES DARWIN.

THE ORCHID REVIEW.

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OUR PROGRAMME.

THE ORCHID REVIEW has been established to supply a want which we believe has long been felt among amateurs of Orchids, namely, a journal devoted to their special interests.

The cultivation of Orchids has become a most important, and to some extent also, a special branch of modern horticulture. The number of people and the amount of capital employed directly or indirectly in it is very large. Already the subject has a literature of its own, though too scattered to be readily accessible, and anything tending to concentrate it would confer a real boon upon those interested in the subject.

In this belief we have decided to establish a monthly repertorium of information on every important branch of Orchidology, and to present it to the reader in a form suitable both for present use and future reference. We believe there is room for such a publication, without unduly interfering with the scope of the existing horticultural press, and we look with confidence for such support as shall enable us to prosecute our labours with success.

The following are among the subjects to which our attention will be specially devoted:—

Descriptions of new species of Orchids, with which our collections are constantly being enriched, will be an important feature of the REVIEW, and some of the more striking of these will be figured, as circumstances permit.

Hybrid Orchids will receive due attention. The importance of recording the origin and parentage of the members of this ever-increasing group will be universally recognised, both for its own sake, and because of the light it throws on the occurrence of hybrids in a wild state.

Notices of interesting collections will constantly be found in our columns,

and will doubtless prove of interest to a wide circle of readers. The rich Burford collection has been selected for the commencement of the series.

Special attention will be devoted to the cultural department, for which seasonable articles will be contributed by experienced cultivators. A comprehensive calendar of operations will be contributed by Mr. W. H. White, of Burford, Dorking, which should prove serviceable to all who are in any way engaged in the cultivation of Orchids.

A series of historical articles is commenced in the present number by the first instalment of a very interesting History of Orchid Hybridisation.

It is intended to make the illustrations a special feature of the work. In order to ensure accuracy and highly finished results, they will be executed and reproduced by a photographic process. Care will also be exercised in their selection.

Notes of rarities, geographical notes and sketches of Orchids at home, biographical sketches, literature, and any other matters likely to prove useful or interesting to Orchidists, will find a place in our pages.

Reports of meetings and exhibitions, with doings of the month generally, will also be adequately provided for.

In short, it is intended to make the work a general repertorium of Orchid lore, and by conducting it on broad and independent lines to enlist the sympathy and secure the support of all lovers of this unrivalled family.

Cattleya × Krameriana.

The reappearance of this excessively rare Cattleya which we have now the pleasure to record, is a matter of considerable interest. It was originally described by Prof. Reichenbach (*Gardeners' Chronicle*, 1882, ii. p. 323) as a supposed natural hybrid between Cattleya intermedia and C. Forbesii. The solitary plant was introduced from Brazil by the late Franz Kramer, gardener to Herr Senator Jenisch, of Kleinflottbeck, near Hamburg. And now the same form has appeared with Messrs. F. Sander & Co., of St. Albans. Among the numerous crosses effected in this establishment was one between the two species above named, which last summer flowered for the first time, and proved absolutely identical with the wild hybrid. Thus the reputed parentage of this plant has been proved, though the experiment was not undertaken with this particular object in view. It is a charming and delicately-coloured hybrid. The sepals and petals are pallid, suffused with palest pink below, and with palest green above. The lip is pallid, suffused with pale blush, the front lobe reticulated with rosy purple on the disc. The characteristic markings of C. Forbesii are thoroughly represented in the lip.

THE HISTORY OF ORCHID HYBRIDISATION.

PART I.

FEW subjects at the present time are of more importance, or possess a greater interest, than the question of Orchid hybridisation. Long ago its practicability as a means of originating new and distinct forms, combining floriferousness and brilliancy of colouring with vigour of constitution, was abundantly demonstrated, and at the present time experiments of one kind or another are in progress in almost every collection of importance. Hybrid Orchids occupy a very important place in modern collections, and their number is now so great, and so constantly increasing, that a summary of the results hitherto obtained in this interesting field will doubtless prove welcome to a large circle of readers.

It was about the year 1852 that the late Mr. Dominy, acting on the suggestion of Mr. John Harris, a surgeon of Exeter, began to make experiments in hybridising Orchids. He is said to have commenced with the genus Cattleya, but the first hybrid which reached the flowering stage was Calanthe × Dominii, and as the results of any cross can only be judged when flowers are produced, it will be convenient to date our observations from this event.

It was in October, 1856, that Calanthe × Dominii flowered for the first time, as was announced by Dr. Lindley, in the pages of the *Gardeners' Chronicle*, in January, 1858. "On the 28th October," he writes, "Mr. James Veitch, jun., of the Exotic Nursery, Chelsea, brought to the writer of this memorandum a flower of a Calanthe which combined the peculiar hairy forked spur and deeply lobed lip of the white Calanthe furcata, with the violet colour and broad middle lobe of the lip of C. Masuca. One might have said that the flowers were just intermediate between the two. . . . It appears that it had been raised in the Exeter Nursery, by Mr. Dominy, Messrs. Veitch's indefatigable and very intelligent foreman, between C. Masuca and C. furcata. The seed was obtained in 1854 by crossing these two species, was immediately sown, and in two years the seedlings were in flower. Nor is it the least remarkable circumstance connected with this production that it grows and flowers freely, while C. Masuca is a 'shy' plant. We therefore propose, with much pleasure, that the name of the hybrid be Calanthe Dominii, in order to put upon record the name of the first man who succeeded in this operation. He is indeed specially entitled to this distinction, not only in consequence of having produced other Orchidaceous mules, among which we understand are Cattleyas, but because of his eminent success in raising such plants from seed, as a matter of horticultural business."

The event was a remarkable one in several respects, and it appears

strange that considerably over a year should have elapsed before Lindley published his account of the plant. There is little doubt, however, that he regarded it with mixed feelings, and it is upon record that when Mr. Veitch first showed him the plant it drew from the Doctor the weighty remark, "Why, you will drive the botanists mad!" in allusion, of course, to the well-known fact that in those pre-Darwinian days all hybrid productions were the special abomination of botanists, who were only too willing to ignore their existence altogether.

About three years later a second hybrid appeared, this time a Cattleya, which was ultimately named Cattleya × hybrida. Five seedling plants were exhibited at a meeting of the Horticultural Society in August, 1859, by Messrs. Veitch, which were noted as exceedingly interesting, and as affording the first examples of well-marked and really showy new forms of Orchids produced by hybridising. The origin of this plant has been variously recorded at different times. C. granulosa and C. Harrisoniæ were first given as its parents, then C. granulosa and C. Loddigesii, and afterwards C. guttata and C. intermedia. The fact is these species were somewhat confused at this period; besides which the importance of carefully recording the particulars of each cross was not fully recognised in these early days. The characters of the plant, however, leave little room for doubt that C. guttata and C. Loddigesii were the parents.

Cattleya × Dominiana appeared immediately afterwards, as it was exhibited at a meeting of the Horticultural Society in November of the same year. It was derived from C. maxima and C. intermedia, the former being recorded as the seed parent. It was named after Mr. Dominy, the raiser, by Dr. Lindley.

Yet another hybrid appeared in 1859, the beautiful Calanthe × Veitchii, which flowered in December, and was exhibited at a meeting of the Horticultural Society on the 8th of that month. It was obtained by crossing Calanthe rosea (then called Limatodes) with the pollen of C. vestita. This is perhaps the most popular hybrid yet raised, as it is now largely cultivated as a most useful autumn-flowering Orchid.

In June, 1861, a plant was exhibited under the name of Goodyera × Dominii, whose parents are recorded as Goodyera discolor and Anœctochilus Lowii. The species of this group are cultivated on account of their variegated leaves, and can hardly be compared with other Orchids, but we may note that this appears to have been a generic cross, the botanical name of its two parents being Hæmaria discolor and Dossinia marmorata, respectively. It was awarded a First-class Certificate, but appears to have been since lost sight of.

In July of the following year another of these ornamental leaved Orchids was exhibited, under the name of Goodyera × Veitchii. Hæmaria discolor was again one parent, the other being Macodes Petola, or Anœctochilus

Veitchianus, as it was then called. This was another generic cross; it was in cultivation in 1888, and may be so still. It also received a First-class Certificate.

In July, 1863, another Cattleya flowered for the first time, namely, C. × Aclandi-Loddigesii, afterwards called C. × Brabantiæ. It was awarded a Silver Banksian Medal and a First-class Certificate. Lindley remarks that "it was shown as Cattleya hybrida, but as the name is not sufficiently distinctive from other hybrid Cattleyas, it is better to apply to it the joint titles of its parents." C. Loddigesii was the seed parent.

The next hybrid which flowered was called Cattleya × exoniensis, and is a most interesting plant. It was exhibited on September 9th, 1863; but, not being fully developed, was only given a Second-class Certificate, though a year later it received the higher award. At first it was said to have been derived from Cattleya Mossiæ and Lælia purpurata, but afterwards from C. Mossiæ and Lælia crispa. The latter record may be correct, though the time of flowering, both of the hybrid and of L. crispa, which was undoubtedly the other parent, suggest Cattleya labiata rather than C. Mossiæ. At all events, it was a generic cross, probably the first one to flower; for the two Goodyeras just mentioned were grown for their foliage, and there is no record of their having flowered. It is still one of the handsomest hybrids of the group to which it belongs.

Immediately afterwards another generic cross flowered for the first time, and was exhibited on September 22nd, 1863, under the name of Cattleya × Devonia, which was afterwards changed to C. × devoniensis. It was said to have been derived from Lælia crispa and Cattleya granulosa, but was soon thought to be a variety of Lælia elegans, and almost lost sight of. The two, however, are quite distinct, and there can be little doubt that the present one was derived from Lælia crispa and Cattleya guttata, while L. × elegans is a natural hybrid between L. purpurata and C. Leopoldi.

The next hybrid which flowered was a genuine Lælia, derived from L. crispa and L. Perrinii, the former being the seed parent. It was exhibited at a meeting of the Horticultural Society in May, 1864, as Cattleya × Pilcheri, the two parents then being generally called Cattleyas. It was afterwards described as Lælia × Pilcheri. It is said to have been raised in 1853, and thus must have been one of Mr. Dominy's earliest crosses.

In May, 1865, another hybrid of the Anœctochilus group appeared. It was exhibited as A. × Dominii, and was awarded a First-class Certificate. Its parents are recorded as Goodyera discolor and Anœctochilus xanthophyllus, and it was said to possess much of the vigorous constitution of the former.

Cattleya × quincolor flowered in June, 1865, and was awarded a First-class Certificate by the Horticultural Society. It was raised by Mr. Dominy between Cattleya Forbesii and C. Aclandiæ.

Cattleya × Manglesii flowered in August, 1866, which, excluding the

three variegated-leaved ones already mentioned, made the tenth hybrid which had flowered in the same number of years. Its parents were at first recorded as Cattleya Mossiæ and C. Harrisoniæ, but afterwards C. Luedde-manniana and C. Loddigesii. Like all the preceding, it was raised by Mr. Dominy, though Prof. Reichenbach, when describing it in 1880, accredited it to Mr. Seden.

The next hybrid was a very interesting generic cross, derived from the evergreen Phaius grandifolius and the deciduous Calanthe vestita, the former being the seed parent. It flowered for the first time early in 1867, and was described by Reichenbach as Phaius × irroratus, the author remarking that it was "one of the beautiful evidences of Mr. Dominy's unrivalled talent in hybridising Orchids." At this time the author transferred Calanthe vestita to Phaius, presumably on the strength of Mr. Dominy's experiment.

Two months later—in May, 1867—Reichenbach described Phaius × inquilinus, as one of Mr. Dominy's seedlings, whose parents are not known. "No doubt," the author remarks, "Phaius vestitus is one of the parents; perhaps Calanthe Masuca or versicolor the other. The flowers are cream colour, the three keels of the lip yellowish-white." Nothing more seems to be known about it. Phaius vestita is a Calanthe, to which genus the hybrid clearly belongs; but as Messrs. Veitch state that C. vestita will not hybridise with the species of the veratrifolia group, this particular hybrid remains a mystery.

It was not until 1869 that a hybrid Cypripedium appeared, when C. × Harrisianum flowered for the first time. It was raised from C. villosum fertilised with the pollen of C. barbatum, and was named by Prof. Reichenbach after Dr. Harris, of Exeter, who first gave Mr. Dominy the idea of hybridising Orchids. It was described in the *Gardeners' Chronicle*, and soon afterwards exhibited at a meeting of the Horticultural Society.

(*To be continued.*)

Oncidium Saintlegerianum.

Some interesting information respecting this striking Oncidium is given by M. Vicomte de Saint Leger in the *Gardeners' Chronicle* for December 3rd last (p. 672). Its habitat is said to be Upper Paraguay, on the frontier of Matto Grosso, Brazil, on the mountains and tree-tops, in a district where from 4° to 8° (Fahr.) of frost sometimes occurs in winter, and where the ground is covered with water for six months of the year, while during the rest of the year it is completely dry. It is said to be easy of cultivation, and able to endure damp, drought, and coolness with impunity. "The Indians fire the plains to make pasturage for their animals. I was obliged to treat with the Indians before I could bring away the few specimens remaining, which unfortunately amounted only to about 3,500 in number." We really hope this latter part of the information may be taken *cum grano salis*.

CYPRIPEDIUM × NIOBE.

THE subject of our first figure is a very charming little hybrid, raised in the collection of Messrs. James Veitch & Sons, of Chelsea, by Mr. Seden. It flowered for the first time in December, 1889, on which occasion it received a First-class Certificate from the Royal Horticultural Society. It was obtained by crossing C. Spicerianum with the pollen of C. Fairieanum ;

Fig. 1. CYPRIPEDIUM × NIOBE.

the seed was sown in 1884, and five years later the first flower appeared. Seedlings were subsequently raised in the collection of Howard Gaskell, Esq., Woolton Wood, near Liverpool, of which the parentage was lost, but as they have proved identical with those raised by Mr. Seden there can be no doubt they were obtained from the same cross. The characters of the two parent species are well combined in the offspring. The dorsal sepal has much of the shape and colour of C. Spicerianum, but veined and reticulated as in C. Fairieanum, though of a much lighter shade. The petals and lip show rather more of the character of the pollen parent, while

the staminode is fairly intermediate in character. Our figure was prepared from a plant which recently flowered in Messrs. Veitch's establishment, at Chelsea.

Cypripedium × Niobe, Rolfe in *Gard. Chron.*, 1890, i. p. 9; *Wien. Ill. Gart. Zeit.*, 1890, pp. 342, 343, fig. 69; *Orch. Album*, x. t. 438; *Orchidophile*, 1892, p. 81, with fig.

C. × Gaskelliana, Gower in *Garden*, 1890, ii. p. 150.

Lælia virens.

Certain species of Orchids never seem to become common in gardens, and this interesting little Lælia must be placed among the number. It was originally discovered by Gardner, on the Organ Mountains, near Rio de Janeiro, in 1837, and in 1844 it flowered with Messrs. Loddiges, of Hackney. Subsequently it was lost sight of, until it re-appeared in the collection of Sir C. W. Strickland, Hildenley, Malton, in 1879. Then it appeared with E. C. Ball, Esq., Down Lodge, Fairlight, Hastings, in 1888, and recently with Messrs. Linden, of Brussels, and W. L. Barclay, Esq., of The Briars, Reigate. When out of flower it is not unlike a small L. crispa, and has also been compared with Cattleya Mossiæ. It is a modest little species, the flowers about an inch long, and borne in racemes of about five. The sepals and petals are light yellowish green, and the undulate lip white.

Lælia virens, Lindl. *Bot. Reg.*, xxx., Misc., p. 1; Rchb. f. in *Gard. Chron.*, 1879, i. p. 716; Rolfe, *l.c.*, 1888, i. p. 360.

Cattleya labiata alba.

The re-introduction of the old autumn-flowering Cattleya labiata is certainly one of the most important events of recent years, and during the past autumn has brightened up many a collection. From its habit of flowering during a particularly dull season it is especially valuable. Though very variable in colour, pure white varieties are not so common as we were led to expect, though more than one has been recorded. One fine one is in the collection of M. G. Warocqué, of Mariemont, and a very chaste form was exhibited at the last meeting of the Royal Horticultural Society, by M. Wells, Esq., of Broomfield, Sale, near Manchester. It had pure white flowers, with a yellow tinge in the throat, and was greatly admired. Another handsome form has flowered in the collection of T. R. Watt, Esq., The Briars, Chislehurst. It has pure white sepals and petals, but the lip is little modified in colour, and the contrast renders it very effective. This form has been called C. labiata elegans.

ORCHIDS OF 1892.

THE three great events of the past year were undoubtedly the introduction of Cypripedium Chamberlainianum, Cattleya Victoria-Regina, and Cattleya Alexandræ, the two former by Messrs. F. Sander and Co., of St. Albans, the latter by Messrs. Linden, of Brussels.

Cypripedium Chamberlainianum is a very distinct and beautiful species from New Guinea, which was named in honour of the Right Hon. J. Chamberlain, M.P. It was awarded a First-class Certificate by the Royal Horticultural Society on April 12th, on which occasion it was described as the gem of the whole show. When the plants become properly established in cultivation it will doubtless prove a great acquisition.

Cattleya Victoria-Regina, named in honour of Her Majesty the Queen, is also an introduction of sterling merit. It was exhibited at a meeting of the Royal Horticultural Society on May 3rd, on the occasion of its flowering for the first time in Europe, and was also awarded a First-class Certificate. It flowered again later in the season. A large number of plants have been distributed, and a general flowering may be expected during the present year.

Cattleya Alexandræ is a very remarkable species, differing from every other in the great length of the peduncles, which bear a cluster of flowers somewhat resembling those of C. Leopoldi in character, at the summit. It was named in honour of H. R. H. the Princess of Wales. Like the preceding, it is not yet established in cultivation, though it flowered late in the season, both at Brussels and Kew, and gave evidence of considerable variability. It is very distinct and beautiful.

Another promising introduction is the Siamese Cypripedium exul, which flowered for the first time in the collection of R. I. Measures, Esq., of Camberwell, and received an Award of Merit from the Royal Horticultural Society on April 19th. It was described in the preceding autumn as a variety of C. insigne, from which, however, it has proved quite distinct.

A considerable number of species introduced by Messrs. F. Sander and Co., of St. Albans, have been described or certificated by the Royal Horticultural Society during the year. Phaius Sanderianus received a First-class Certificate; Oncidium Gravesianum, from Brazil, and Calanthe Sanderiana, from East Africa, received Awards of Merit; and Oncidium Rolfeanum, from Colombia, was awarded a Botanical Certificate. Other plants described from the same source are: Calanthe vestita var. Fournieriana, from Borneo, Cattleya Batalinii, Cœlogyne cuprea, Dendrobium chrysocepalum, D. O'Brienianum, D. platycaulon, Epidendrum Godseffianum, Maxillaria glumacea, Odontoglossum auriculatum, O. Owenianum, Oncidium Saintlegerianum, Restrepia ecuadorensis, Vanda Arbuthnotiana, and Zygopetalum graminifolium.

Messrs. Linden, of Brussels, have introduced several striking novelties, of which Eulophiella Elisabethæ is the most remarkable. This plant is described as constituting a new genus, and is figured at plate 325 of the *Lindenia*. Zygopetalum Lindeni is a handsome species of the section Warscewiczella, which received a First-class Certificate from the Royal Horticultural Society on June 7th. Stauropsis Warocqueana is a fine species from New Guinea, which flowered in the collection of M. G. Warocqué, of Mariemont. Coryanthes macrocorys is a very distinct species, differing from every other in its long and narrow, very fleshy helmet. Bulbophyllum anceps, Cirrhopetalum Amesianum, Peristeria Lindeni, Stanhopea Moliana, and Trichopilia brevis, like the preceding, have all been figured in the *Lindenia* within the year. Oncidium cristatum, with a twining raceme of bright yellow flowers, has also been described from this source.

It is not our purpose to enumerate every species individually, but before passing on to the hybrids we may mention the very distinct Odontoglossum platycheilum, for which R. I. Measures, Esq., of Camberwell, received an Award of Merit; the charming little Habenaria carnea, introduced by Mr. Curtis of the Forest Department, Perak, with pale blush flowers and variegated leaves, which flowered at Kew, and with Messrs. James Veitch and Sons, of Chelsea; the orange-coloured Disa incarnata, introduced from Madagascar by Messrs. W. L. Lewis and Co., of Southgate, after having been known to science for upwards of half a century; the distinct Cymbidium Humblotii, also from Madagascar, with flowers resembling those of Cœlogyne pandurata, for which C. Ingram, Esq., of Godalming, received a Botanical Certificate; and Odontoglossum guttatum, which flowered with G. le Doux, Esq., of East Molesey. A number of others were described, which chiefly come under the heading of Botanical Orchids.

Garden hybrids are becoming more numerous every year, and those of 1892 are fully up to the average, though no sensational hybrid has appeared.

The pioneers of Orchid hybridisation, Messrs. James Veitch and Sons, of Chelsea, are as usual well to the front. Seven striking novelties received the award of First-class Certificate from the Royal Horticultural Society. These were:—Epidendrum × Endresio-Wallisii, a charming little hybrid, whose parentage is indicated by its name; Cypripedium × Adrastus, derived from C. × Leeanum ♀ and C. Boxallii ♂; Zygopetalum × leucochilum, from Z. Burkei and Z. Mackayi; Lælia × Latona, from Lælia cinnabarina ♀ × and L. purpurata ♂; Cattleya × leucoglossa, from C. Loddigesii ♀ and C. fausta ♂; Sophrocattleya × Veitchii, a charming hybrid of rather complex parentage, being derived from Sophrocattleya grandiflora fertilised with the pollen of Lælio-cattleya × Schilleriana, and Cypripedium × Tityus, derived from C. Spicerianum ♀ and C. × œnanthum superbum ♂. Eleven others received Awards of Merit, as follows:—Dendrobium × Euryclea, from D. lituiflorum ♀ and D. Wardianum ♂; Phalænopsis × Artemis, from

P. amabilis (Blume) ♀ and P. rosea ♂; Cattleya × Philo and C. × Philo albiflora, both from C. Mossiæ ♀ and C. iricolor ♂, C. × Minucia, from C. Loddigesii ♀ and C. labiata var.; Selenipedium × Brysa, from S. × Sedeni candidulum ♀ and S. Boissierianum ♂; S. × Perseus, from S. × Sedeni porphyreum ♀ and S. Lindleyanum ♂; Cypripedium × Ianthe, from C. × Harrisianum ♀ and C. venustum ♂; C. × Evenor, from C. Argus ♀ and C. bellatulum ♂; C. × Telemachus, from C. niveum ♀ and C. Lawrenceanum ♂; and C. × Arthurianum pulchellum, from C. Fairieanum ♀ and C. insigne Chantini ♂. The following five others have also appeared from this establishment :—Dendrobium × dulce, from D. aureum ♀ and D. Linawianum ♂; D. × striatum, from D. moniliforme (japonicum) ♂ and D. pulchellum (Dalhousieanum) ♂; D. × Adrasta, from D. Pierardii ♀ and D. superbum ♂; Cypripedium × eurylochus, from C. ciliolare ♀ and C. hirsutissimum ♂, and C. × Crethus, from C. Spicerianum ♀ and C. Argus ♂.

From the establishment of Messrs. F. Sander and Co., of St. Albans, several distinct hybrids have appeared. Cattleya × Burberryana, derived from C. intricata ♀ and C. superba ♂, received a First-class Certificate; Lælia × Oweniana is a very pretty hybrid, derived from Lælia pumila Dayana ♀ and L. xanthina ♂; and Dendrobium × Rolfeæ, derived from D. primulinum ♀ and D. nobile ♂, is a very promising thing. Of Cypripediums may be mentioned, C. × G. S. Ball, from C. Spicerianum ♀ and C. Lawrenceanum ♂; C. × Ashworthi, from C. × plunerum ♀ and C. Spicerianum ♂; C. × Mrs. C. D. Owen, from C. × superciliare ♀ and C. villosum ♂. Lastly come two Selenipediums, S. × Baconis, from S. × chlorops ♀ and S. Schlimii ♂; and S. × Edithæ, from S. × conchiferum ♀ and S. Schlimii albiflorum ♂.

From other trade firms may be mentioned:—Lælio-cattleya × claptonensis, derived from Lælio-cattleya × elegans ♀ and Cattleya Dormaniana ♂, exhibited by Messrs. Hugh Low and Co., of Clapton; Cypripedium × southgatense, derived from C. bellatulum and an unknown parent, for which Messrs. W. L. Lewis and Co., of Southgate, received a First-class Certificate; and C. × Swinburnei, derived from C. insigne Maulei ♀ and C. Argus ♂, for which Messrs. Heath and Son, of Cheltenham, received an Award of Merit.

The hybrids raised in private collections are very numerous, and comprise the following :—

From Sir Trevor Lawrence, Burford, Dorking :—Cypripedium × Lawrebel, a very handsome thing derived from C. Lawrenceanum ♀ and C. bellatulum ♂, which received a First-class Certificate; and Masdevallia × Shuttryana, from M. Shuttleworthii ♀ and M. Harryana ♂.

From C. Ingram, Esq., Godalming:—Lælio-cattleya × Ingrami, from Lælia pumila Dayana ♀ and Cattleya Dowiana aurea ♂ (First-class Certificate); Cypripedium × gigas, from C. Lawrenceanum and C. Har-

risianum (Award of Merit); C. × Hecla, from C. × superciliare ♀ and C. × Swanianum ♂; C. × Bijou, from C. × œnanthum ♀ and C. Lawrenceanum ♂; C. × The Gem, from C. marmorophyllum ♀ and C. insigne Chantini ♂; C. × La Nymphe, from C. × œnanthum ♀ and C. × Danthieri ♂; and Selenipedium × Elsteadianum, from S. × conchiferum ♀ and S. × grande ♂.

From C. Winn, Esq., Selly Hill, Birmingham:—Cymbidium × Winnianum, from C. giganteum ♀ and C. eburneum ♂ (First-class Certificate); Dendrobium × Nestor, from D. Parishii ♀ and D. superbum ♂; Cypripedium × Edith Winn, from C. Stonei ♀ and C. purpuratum ♂; C. × Cleopatra, from C. Hookeræ ♀ and C. × œnanthum ♂; and C. × Ensign, from C. × Harrisianum ♀ and C. barbatum ♂.

From Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne:—Lælio-cattleya × Phœbe, from Cattleya Mossiæ ♀ and Lælia cinnabarina ♂ (First-class Certificate); and Cypripedium × Bryani, from C. philippinense ♀ and C. Argus ♂ (Award of Merit).

From Sir W. Marriott, Down House, Blandford:—Lælio-cattleya × Marriottiana, from Lælia flava ♀ and Cattleya Skinneri ♂ (Award of Merit).

From G. F. Tautz, Esq., Dibdin House, Hanger Hill, Ealing:—Cypripedium × Cowleyanum, from C. Curtisii ♀ and C. niveum ♂.

From Baron Schröder, The Dell, Egham:—Cattleya Baroness Schröder, from Cattleya Trianæ and C. dolosa (First-class Certificate); and Lælio-cattleya × eximia from Lælia purpurata and Cattleya Warneri.

From G. Hardy, Esq., Timperley, Cheshire:—Selenipedium × Hardyanum, from S. caudatum ♀ and S. × Ainsworthii ♂.

From D. O. Drewett, Esq., Riding, Mill-on-Tyne:—Phaius × hybridus, from P. grandifolius ♀ and P. Wallichii ♂.

From H. M. Pollett, Esq., Bickley, Kent:—Cypripedium × Parksianum, from C. Spicerianum and C. × marmorophyllum.

From J. C. Bowring, Esq., Forest Farm, Windsor Forest:—Cypripedium × Leda, from C. × Harrisianum ♀ and C. venustum ♂.

From H. Graves, Esq., Orange, New Jersey, U.S.A.:—Cypripedium × Daisyæ, from C. Lowianum ♀ and C. × œnanthum superbum ♂.

From M. Jules Hye-Leyssen, of Ghent, Belgium:—Cypripedium × decorum, from C. × Sallieri Hyeanum and C. Lawrenceanum.

Phalænopsis × Amphitrite is a hybrid raised from P. Sanderiana ♀ and P. Stuartiana ♂. It was described by Dr. Kränzlin, without any record o the raiser.

Dendrobium × barbatulo-chlorops is a very interesting hybrid, which flowered in the collection of Major-General E. S. Berkeley, of Spetchley, Bitterne Park, Southampton, in February last. It was imported from the Deccan Peninsula, India, where the two parent-species grow together in hundreds.

In all probability this does not exhaust the hybrids which flowered for the first time during 1892, but it includes the principal ones placed on record, with the exception of those exhibited at the last meeting of the Royal Horticultural Society on December 13th, for which see the special report on a later page.

Cattleya Alexandræ.

Although extremely distinct from a botanical standpoint, the horticultural value of this Cattleya could scarcely be judged from dried specimens, from which the description was prepared. They showed, however, a raceme of ten flowers, borne on a peduncle fifteen inches long, the latter character quite unique in the genus. Several plants have now flowered, and afford abundant indications of what this Cattleya will be when properly established. A flower expanded, for the first time in Europe, with Messrs. Linden, of Brussels, on October 9th last. A fortnight later, one appeared at Kew, and early in November others followed, both in the collection of Saint Hill Pearse, Esq., Brierley Hill, Staffordshire, and with Messrs. Linden. It is certainly very variable. The typical form appears to have coppery-brown sepals and petals with a rose-purple lip; but one flower had green sepals and petals with some purple-brown spots, another (var. tenebrosa) had these organs dark, dusky brown, while in a third (var. elegans) they were of a light purple-mauve, almost of the shade of Lælio-cattleya × elegans Turneri. The latter is a handsome form, with the side lobes of the lip larger, somewhat reflexed at the tip, which part is of a bright crimson-purple shade. The long peduncles and elegantly undulated sepals and petals render it very distinct from C. Leopoldi, which is apparently its nearest ally. Messrs. Linden, of Brussels, discovered this remarkable Cattleya, and introduced a stock of it in the early part of 1892; but afterwards it was also obtained by Messrs. F. Sander & Co., of St. Albans. It is a decided acquisition, and will probably be sought after by the hybridist. If crossed with fine forms of the labiata group it would probably produce some striking results.

Cattleya Victoria-Regina.

The introduction of the above Cattleya by Messrs. F. Sander & Co., of St. Albans, promises to be one of the events of recent years. One of the plants flowered early last season, and when exhibited at a meeting of the Royal Horticultural Society received the award of a First-class Certificate, and was universally admired. Quite recently another plant has expanded its blooms and confirms all its early promise. The flowers are large and handsome, and of an almost uniform bright rosy purple shade. A large number of plants have been distributed, but have not yet become established in cultivation. Next season a more general flowering may be expected.

THE BURFORD COLLECTION.

THE Burford collection of Orchids is an extremely rich and varied one, and one of the most thoroughly representative in existence. It contains a large number of the best and showiest species, varieties, and hybrids in cultivation, together with many rare botanical beauties and curiosities, for which its owner, Sir Trevor Lawrence, Bart., President of the Royal Horticultural Society, has a special predilection. There are a dozen houses devoted entirely to Orchids, and the good culture everywhere observable shows the ability and intelligence which Mr. W. H. White, who succeeded the late Mr. J. C. Spyers in charge of the collection, brings to bear upon his work.

All the showy genera are well represented. At the time this article was written the deciduous Calanthes were in bloom, and made a brilliant display. It is interesting to note that the numerous hybrid forms now in cultivation have all been derived from the intercrossing of three species, viz., Calanthe vestita (and its varieties), C. rosea (formerly called Limatodes rosea), and C. labrosa, the latter extremely rare in cultivation, though represented here. Several handsome forms have been raised in the collection. C. × porphyrea, one of the most distinct of them, was obtained by crossing C. labrosa with the pollen of C. vestita rubro-oculata. Of C. × sanguinaria, the darkest and richest coloured of the group, the parentage has unfortunately been lost, also of C. × versicolor, a handsome form, with large white flowers, and a rose-coloured eye, to which the Royal Horticultural Society gave an Award of Merit in December, 1891. C. × Veitchii and its variety lactea, C. × Sedeni, C. × bella, and others are represented by numerous examples, while the variable C. vestita Regnieri, just coming into bloom, helps greatly to prolong the Calanthe season, as it continues flowering until the end of March.

Cypripediums are represented by most of the cultivated species and the best of the hybrids, the inferior ones not being admitted to the collection. C. Stonei var. platytænium is the rarest and most valuable of all, as the plants in existence are all subdivisions of one original piece. But C. × Morganiæ burfordiense, is its equal in point of beauty. The seed was obtained by hybridising a good form of C. superbiens with the pollen of C. Stonei, and was sown by the late Mr. J. C. Spyers, when Orchid grower to Sir Trevor Lawrence, in the month of July, 1881. The young seedlings did not make much progress for several years, and it was not until July, 1889, that the first flowers appeared. This excellent variety of C. Morganiæ was exhibited at a meeting of the Royal Horticultural Society last November, when it was unanimously awarded a First-class Certificate by the Orchid committee, and greatly admired by all present.

C. Fairieanum, a rare and lovely little species, is represented here by two

small but healthy plants. A flower opened towards the end of August and lasted until the middle of November, it would no doubt have remained longer had it not been fertilised. It is remarkable that the flower should remain fresh for so long a time on so small a plant. This species has proved very useful for hybridisation purposes, as several beautiful hybrids have been obtained from it, viz., C. × Arthurianum, C. × Niobe, and C. × H. Ballantine, raised by Mr. Seden for Messrs. Veitch, also the pretty C. × Juno raised by Mr. D. O. Drewitt.

That new and beautiful species, C. Rothschildianum, has proved itself, when once established, a strong, free grower, and very floriferous. It will doubtless prove of great use to hybridists, in supplying them with a remarkably distinct species upon which to work. There are here several strong plants bearing good plump capsules. All seedlings obtained from this source will be watched with the greatest interest. A few have already appeared here, and will be put into small pots as soon as possible. C. Lawrenceanum is the pollen parent.

Another remarkable species is C. præstans, not often seen in flower. It is a very slow grower, taking from eighteen months to two years to complete a flowering growth.

Cypripedium bellatulum, C. Godefroyæ, C. niveum, and C. concolor are generally considered "miffy" growers. Here the plants succeed well, placed near the glass in the south-west corner of the East Indian house. They have been tried in several houses and in different positions, and they now grow well, bloom freely, and seem quite at home. Several pretty and distinct hybrids have been raised from these species. The beautiful C. × Lawrebel was obtained by crossing C. Lawrenceanum with the pollen of C. bellatulum. It was exhibited at a meeting of the Royal Horticultural Society during the past year and awarded a First-class Certificate. The first flower of this variety resembled the pollen rather than the seed parent, but since then another plant has bloomed with opposed characteristics. Several other plants are now showing flower, and the result is awaited with some curiosity.

Yet another, which may reasonably be expected to be a fine hybrid, is C. concolor, crossed with the pollen of C. Lawrenceanum. Its flowers are nearly open. In habit it resembles C. concolor, but the foliage is longer, broader, and more mottled. It should prove equal or superior to the beautiful C. × tesselatum porphyreum, which was derived from C. concolor and C. barbatum ♂.

Two other special crosses are C. niveum crossed with C. × vexillarium, and C. concolor with C. Stonei platytænium. Unfortunately, only one plant has been obtained of this latter, but it is strong and in the best of health, though of rather slow growth.

At the time of writing there is a fine show of C. × Leeanum and its

varieties superbum and giganteum. Of the many plants in flower scarcely two are alike.

The beautiful and floriferous Selenipediums are favourites here. The rare S. × Saundersianum is pushing up a flower spike with two buds. It was raised by crossing S. caudatum and S. Schlimii, by Mr. Wm. Marshall, of Enfield, and dedicated to the late Mr. W. Wilson Saunders, "the Mæcenas of horticulture of his time," and for many years treasurer of the Royal Horticultural Society. What a pretty and delicate flower is S. × leucorrhodum! A plant here has three strong spikes with several blooms open. This variety, with S. × Schröderæ, S. × cardinale, and S. × calurum, are among the best of the genus.

Next we come to the Dendrobiums, one of the most beautiful genera of the Orchid family, and of which there is a good representative collection. Amongst rare forms we may mention:—D. lituiflorum candidum, a most beautiful and distinct variety, the flowers pure white with a pale yellow disc to the lip; D. Parishii albens, with nearly white flowers, also very rare; D. Devonianum candidulum, represented by two healthy plants, has white flowers, with two orange-yellow blotches on the disc of the lip; and D. superbum Burkei, one of the most beautiful of white Dendrobiums, with the disc of the lip light purple. D. Harveyanum is a pretty and very remarkable species, allied to D. Brymerianum, but with smaller flowers, and the petals fimbriated like the lip.

Many superb varieties of Dendrobium nobile are grown, as nobilius (a splendid specimen with about thirty bulbs, nearly three feet in length), elegans, Tautzianum, albiflorum, intermedium, etc., also the remarkable sports from nobile—Cooksonianum, Tollianum, and the Burford variety, which has the inner halves of the lateral sepals marked with deep amethyst purple, like the lip.

By the time this is in print a number of seedling Dendrobiums raised at Burford will be in flower. One of the most remarkable results yet chronicled in the genus was obtained here, by crossing D. × Ainsworthii with the pollen of D. Findlayanum, and *vice versâ*. The seedlings began to flower in 1877. The first had a purple disc, and was named by the late Prof. Reichenbach, D. × melanodiscus, but the second had a deep yellow disc, and was called D. × chrysodiscus. Others from the same batch have been called D. × Juno, D. × Luna, etc. So different are the forms that no one would ever suspect them to have the same parentage.

Other pretty and interesting hybrids, raised by crossing D. Linawianum with the pollen of D. Wardianum, were named, by the same author, D. × chlorostele and D. × chlorostele xanthocentrum.

Another hybrid raised here by crossing D. Kingianum with the pollen of D. speciosum flowered for the first time in the spring of last year. It is quite distinct, but its merits cannot be judged until the plant becomes stronger.

The richly coloured D. × rhodostoma is a very free grower, and exceedingly floriferous. There are several plants grown, and may nearly always be seen in bloom.

Of crosses expected to flower during the present season we may note—D. aureum crossed with D. Linawianum, and *vice versâ*; D. nobile nobilius with D. aureum, and D. nobile nobilius with D. × splendidissimum grandiflorum; while in succession come D. nobile elegans crossed with D. Wardianum, D. nobile with D. signatum, and D. × splendidissimum grandiflorum with D. Wardianum.

There is yet a large field open to the hybridist in this genus, and at the present time we observe a number of plump capsules on the plants, awaiting the sun to ripen them. For many years past frequent attempts have been made to obtain seed from such species as D. moschatum, D. Calceolus, D. fimbriatum and its variety oculatum, D. clavatum, D. chrysotoxum, etc., but without success. Last year over a hundred flowers of D. fimbriatum alone were hybridised, but not a single seed-pod was obtained.

Cattleyas and Lælias are extensively cultivated, and many rare and choice kinds are to be found, as Cattleya intermedia Parthenia (pure white), C. Mossiæ Reineckiana and C. M. Wageneri, C. Skinneri alba, C. × calummata, C. × Harrisii, C. × Marstersoniæ, C. × porphyrophlebia, Lælia Perrinii alba, L. × Pallas, and of hybrids between the two genera, now placed under Lælio-cattleya ×, we note L. × Amesiana, L. × Arnoldiana, L. × callistoglossa, L. × Canhamiana, L. × exoniensis, L. × fausta delicata, L. × Mardelli, L. × Schilleriana euspatha, and L. × Veitchiana.

The new Cattleya Victoria-Regina is pushing its flower-buds, which by the time this is in print will be open. Cattleya Trianæ, too, is pushing many flowering sheaths, and will in all probability soon make a fine display of bloom. Such varieties as Leeana, Osmani, and Backhousiana are well known; but one variety of Belgian origin, named "Reine des Belges," is considered by Sir Trevor Lawrence to be the finest he has yet seen.

In the largest Cattleya house is a small batch of healthy Cattleya seedlings, the best crosses being C. Schilleriana × Trianæ, C. Dormaniana × luteola, C. Warscewiczii × Mossiæ, C. Mossiæ × Lawrenceana, C. Warscewiczii × Lælia purpurata Brysiana, L. purpurata × Cattleya Mossiæ, and L. xanthina × C. Dowiana.

Three houses are filled with Odontoglossums and other cool-growing Orchids, but it would require too much space to refer to them in detail. A few of the choicer kinds, however, may be mentioned, as Odontoglossum × prionopetalum, several handsome varieties of O. × excellens, O. × Wilckeanum, O. × Andersonianum, and many richly spotted forms of O. crispum. Also the rare O. nevadense, O. bictoniense album, O. Cervantesii decorum, O. Krameri, O. madrense, O. nævium, O. pardinum, also several nice plants of Miltonia Schroederiana.

Hanging close to the roof-glass are half-a-dozen Odontoglossum seedlings growing freely. They were found on a plant bought from Mr. Buchan's collection at Southampton, but unfortunately their parentage is unknown.

In the same house are several large specimen Maxillarias, as the rare M. fucata (Rchb. f.), M. grandiflora, M. picta, M. lepidota, M. Hubschii, the distinct M. Sanderiana, and others.

Masdevallias are a speciality at Burford, one lean-to house, about forty feet long, being almost entirely devoted to them. It contains all the best and rarest forms obtainable, viz., M. muscosa, a very remarkable species, owing to its mossy peduncles and sensitive lip; M. cucullata, M. Rolfeana, M. astuta, M. × Fraseri, M. × Gairiana, M. × splendida, etc.; while of the M. coccinea group there are many brilliant forms. M. tovarensis is an extremely pretty species, its pure white flowers being valuable at this season of the year, both for cutting and decorative purposes. Plants of the M. Chimera group are also extensively cultivated.

In the Mexican house, Lælia anceps and its varieties promise to make a fine show, most of the white and rose-coloured varieties being represented. In the same house are fine specimens of Vanda teres and its variety alba, which make strong growths and bloom freely each year, producing as many as six to nine flowers on each spike. A large specimen of Schomburgkia Lyonsii is also sending up a strong flower spike. It has never flowered in this collection before. A fine plant of Schomburgkia Tibicinus is also showing a strong flower spike.

In one of the hottest houses stands the giant Grammatophyllum speciosum, with strong stout growths, measuring upwards of six and a half feet in length, and eight inches in circumference. Every effort has been made to induce this plant to flower, but hitherto without success. It flowered with Messrs. Loddiges, of Hackney, in 1851, and in the collection of W. G. Farmer, Esq., of Nonsuch Park, Ewell, Surrey, in 1859. The latter plant had stems from nine to ten feet high, the flower-stems were six feet long, and the expanded flowers nearly six inches across, thickly spotted with red-brown spots on a yellow ground.

Another giant Orchid here is Renanthera coccinea, with about two dozen growths, from seven to eight feet long. This plant was imported from China in 1815. It ultimately passed into the hands of Mr. Morse, of Epsom, who had known it for upwards of forty years, and it has now been in this collection about fifteen years.

Sobralia Cattleya is another very stubborn plant, as many plans have been tried to induce it to show its beautiful flowers. It has thirteen strong growths, measuring upwards of nine feet in length. In June, 1891, the plant was put out in the open air in full sunshine, and remained there night and day until the middle of September, when it was taken into a cold peach-house at night.

Other Sobralias grown here are—S. macrantha, a noble specimen, with about one hundred strong growths; S. xantholeuca, S. albo-violacea, S. virginalis, S. chlorantha, S. Warscewiczii, S. Fenzliana, etc.

One of the best winter-flowering Orchids is Cœlogyne cristata and its varieties, of which there are fine specimens here, two plants of the variety hololeuca having from fifty to eighty flowering growths. Many rare Cœlogynes are also included in the collection, of which C. Foerstermanii, C. Cumingii, and C. graminifolia may be mentioned.

No mention has been made of the numerous species of Angæcum, Phaius, Catasetum, Mormodes, Cycnoches (including the unique plant of C. versicolor), Cymbidium, Zygopetalum, Ansellia, Vanda, Aërides, Oncidium, etc., etc.; nor of the neglected genera Bulbophyllum, Cirrhopetalum, and Pleurothallis, in which the owner takes great interest; nor yet of many other curiosities more or less unique, such, for example, as Dendrobium Hughii, and the grass-green but lovely D. O'Brienianum. It is in the endless variety of habit, mode of growth, and structure of flower; in the quaint distinctiveness and never-ending surprises, that the charm of a varied collection of orchids lies. An educated horticultural taste will weary of the gorgeous Cattleya, lovely as it is, and find rest and satisfaction in beauty more modest and refined. Both elements, however, are well represented in the Burford collection, in which the most exacting taste could scarcely fail to find something of interest throughout the year.

DENDROBIUM AMBLYORNIDIS AND THE GARDENER-BIRD.

Dendrobium Amblyornidis was described as long ago as 1878 (Rchb. f. in *Gardeners' Chronicle*, 1878, i. p. 332), yet nothing more seems to be known about it at the present time. It is a native of New Guinea, and was found on Mount Arfak by the enterprising traveller Signor Beccari. Though not a particularly pretty Orchid, it seems to be a very useful one, at all events its stems are said to be exclusively used by one of the Birds of Paradise (Amblyornis inornata), of about the size of a turtle-dove, for the construction of its very curious nest. The plant is described as bushy in habit, with strong, thin branches, lanceolate leaves, and small, insignificant flowers.

Signor Beccari has given a very interesting account of his discovery of the nest, from which it would appear that the bird is not only a gardener, but an Orchidist, too, in its own way, and therefore should enlist the sympathy of our readers. Beccari was on a projecting spur of Mount Arfak, at about 4,800 feet elevation. The virgin forest was very beautiful,

though scarcely a ray of sunshine penetrated the branches, and the ground was almost destitute of vegetation. Suddenly he came upon a most remarkable specimen of the industry of an animal, which he describes as "a hut or bower close to a small meadow enamelled with flowers." The structure is described as about two feet high and three feet in diameter, conical in shape, and with an opening on the side. "All the stems used by the Amblyornis are the thin stems of an Orchid (Dendrobium), an epiphyte forming large tufts on the mossy branches of great trees, easily bent like straw, and generally about twenty inches long. The stalks had the leaves, which are small and straight, still fresh and living on them, which leads me to conclude that this plant was selected by the bird to prevent rotting and mould in the building, since it keeps alive for a long time, as is so often the case with epiphytical Orchids."

"Before the cottage there is a meadow of moss. This is brought to the spot and kept free from grass, stones, or anything that would offend the eye. On this green tuft, flowers and fruit of pretty colour are placed so as to form an elegant little garden. The greater part of the decoration is collected round the entrance to the nest, and it would appear that the husband offers there his daily gifts to his wife. The objects are very various, but always of vivid colour. There were some fruits of a Garcinia, like a small-sized apple. Others were the fruits of Gardenias of a deep yellow colour in the interior. I saw also small rosy fruits, probably of a Scitamineous plant, and beautiful rosy flowers of a splendid new Vaccinium. There were also fungi and mottled insects placed on the turf. As soon as the objects are faded they are moved to the back of the hut."

One of the native names of the bird is said to be "Tukan Robon," which means a gardener. It is also called "Buruk Gurea," or master-bird, from its power of imitating the notes of other birds. It would appear to be a very clever bird, and, as Beccari remarks, "The passion for flowers and gardens is a sign of good taste and refinement," though it seems to have become an Orchidist from utilitarian motives. It is perhaps not surprising to learn that "the Papuans take great care never to disturb these nests or bowers, even if they are in their way." The plant seems to be in no danger of extermination by collectors, but if of no value from a decorative standpoint one would at least like to see so interesting an Orchid.

THE HYBRIDIST.

UNDER this heading we propose to record briefly the characters and parentage of the numerous hybrids of artificial origin which are constantly appearing in gardens. The utility of such a record will be readily apparent, on account of the rapid progress made in this particular branch of horticulture. To the industry, patience, and skill of the hybridist our gardens are indebted for many of their choicest treasures, and what the future may produce it would be rash to predict. Botanical science has also been benefited to an extent which few of her devotees are willing to admit, for the hybridist has settled once and for all the true status of a number of plants which formerly was the subject of considerable doubt. We allude to such plants as Phalænopsis × intermedia, Cattleya × Krameriana, Masdevallia × Parlatoreana, Odontoglossum × Wilckeanum, O. × excellens, and others, which exist in a wild state, yet have no claim to the rank of species, but are more than simply varieties. In short, it has been demonstrated that Nature has forestalled the work of the hybridist in numerous instances. We now know that he only does what Nature has been carrying on for ages. But the winged tribes, whose labours our Dominys and Sedens seek to emulate, carry on their work under very different conditions. They have no such wealth of materials to select from, as the parent species often grow far apart, though, where circumstances are favourable, they sometimes carry on the work on a grand scale. Above all, they keep no records. It is, however, beyond question that a considerable number of hybrids exist in a wild state, and the light which the labours of the hybridist has thrown on this difficult subject has been of the greatest service in establishing this point. So that, whether from the norticultural or the botanical standpoint, the work of the hybridist merits the fullest recognition.

LÆLIO-CATTLEYA × BRYMERIANA.

This very handsome hybrid was raised in the collection of W. E. Brymer, Esq., M.P., of Islington House, Dorchester (gr. Mr. J. Powell), and flowered for the first time in August last. Its parentage is rather complex, as the mother plant is itself a hybrid. It was obtained by crossing Lælio-cattleya × amanda (a natural hybrid between Cattleya intermedia and Lælia Boothiana) with the pollen of Cattleya Warscewiczii (known in gardens as C. gigas). It is quite intermediate in character, as some of the pseudobulbs have one leaf and others two, and a similar combination of the characters of the two species may also be seen in the flower. It may be described as a greatly enlarged edition of the mother plant, as it has the general shape of this parent, but considerably brighter colour. The

lip is obscurely three-lobed, and considerably narrower in front than behind, not parallel-sided, as in the Cattleya parent. The sepals and petals are light rosy purple, and the lip considerably darker, but without the yellow blotches of the pollen plant. It is a bold and very handsome hybrid, and a decided acquisition.

Masdevallia × McVittiæ.

This is a pretty little hybrid, raised in the collection of W. Thompson, Esq., Walton Grange, Stone (gr. Mr. W. Stevens), it is said between Masdevallia tovarensis ♀ and M. Veitchii ♂, to which an Award of Merit was given by the Royal Horticultural Society at its meeting on December 13th last. The plant was a strong one, with several leaves and a two-flowered scape about nine inches high. The flower is about intermediate in shape, and delicate light purple in colour with a white tube. In the leaf, this plant bears a considerable resemblance to M. tovarensis, the seed parent; but the shape of the flower and the colour are both greatly modified. There is no trace of the beautiful violet hairs so characteristic of M. Veitchiana, and the shape and colour of the flower would suggest some form of M. coccinea (*i.e.*, M. Lindeni or M. Harryana) as the pollen parent. It was raised some twelve or fourteen years ago, and has now flowered for the first time. It is named after a married daughter of Mr. Thompson. It bears a considerable resemblance to M. × Measuresiana (Rolfe in *Gardeners' Chronicle*, 1890, ii. p. 379), derived from M. tovarensis and M. amabilis. The one other hybrid derived from M. tovarensis is M. × Hincksiana (Rchb. f. in *Gardeners' Chronicle*, 1887, ii. p. 214), which had M. ignea for the pollen parent.

Cymbidium × Winnianum.

This hybrid Cymbidium, the second one raised, is a decided acquisition. It originated in the collection of Charles Winn, Esq., Selly Hill, Birmingham, from C. giganteum ♀ and C. eburneum ♂. A plant, with five-flower-spikes, was exhibited by Messrs. F. Sander & Co., of St. Albans, at a meeting of the Royal Horticultural Society on November 1st last, and was awarded a First-class Certificate. The plant bears a considerable resemblance to C. giganteum, but the shape of the flower is somewhat modified, and the colour of the sepals and petals pale greenish yellow, or nearly straw-coloured. The first hybrid Cymbidium, C. × eburneo-Lowianum (*Gardeners' Chronicle*, 1889, i. p. 363), was raised by Mr. Seden, from C. Lowianum ♀ and C. eburneum ♂. It has larger, differently coloured flowers.

Cypripedium × Edwardii.

The hybrids derived from Cypripedium Fairieanum are a charming little group; perhaps no other species has yielded such uniformly good results. C. barbatum, C. callosum, C. insigne, C. purpuratum, and C. Spicerianum, have already been crossed with it, and now C. superbiens must be added to the list. This latest combination has been effected in the collection of H. Graves, Esq., of Orange, New Jersey, U.S.A., and has been dedicated to that gentleman's eldest son. According to Mr. Grey, the gardener, C. Fairieanum was, as usual, the pollen parent. The hybrid is quite intermediate in character, both in shape and colour. The leaves are

Fig. 2. CYPRIPEDIUM × EDWARDII.

faintly tessellated; the dorsal sepal white, tinted with green at base and with vinous purple near the margin, and lined and somewhat reticulated with green, some of the lines being specked with brown. The drooping undulate petals are translucent in colour, with pale green nerves, and a vinous tint near the margin, which, together with the base, is thickly dotted with vinous purple. The lip is shaded with brown in front, paler behind, reticulated with dark green, and dotted inside with vinous purple. The staminode is large, and reticulated with deep green. It flowered in September last, when the photograph here reproduced was made.

CALENDAR OF OPERATIONS FOR JANUARY.

By W. H. WHITE, Burford, Dorking.

HAVING undertaken to write the Calendar of Operations for the ORCHID REVIEW, I will endeavour to state the methods which I have found by experience to lead to success in the cultivation of this beautiful and interesting class of plants. It must be remembered that I write chiefly for beginners and amateurs, though it is hoped that more experienced cultivators may be able to pick up useful hints in a subject in which so much yet remains to be learnt. Our knowledge of Orchid cultivation has improved considerably during the last ten or fifteen years; yet in large and varied collections there are always some plants which do not grow satisfactorily, and not always from want of care or perseverance on the part of the cultivator. The only way to success is by careful observation and intelligent efforts to discover the cause of failure.

It is not absolutely necessary to have a separate division for each section of Orchids. The only structures really necessary are the East Indian, or hottest house; Cattleya, or intermediate house; the Mexican house; and the cool, or Odontoglossum house. Their respective temperatures by night for this and the next three months should be as follows:—East Indian, 60°—65°; Cattleya, 55°—60°; Mexican, about 55°; cool house, 45°—50°, though when the weather is severe a few degrees less will be beneficial. By day, with sun heat, it matters little how much the rise of temperature may be, provided there is sufficient air and moisture to balance it. At the same time, the hot-water pipes should not be allowed to become too warm. Immediately the sun makes its appearance, if it is likely to continue to shine, the furnace-doors should be opened wide, and the dampers shut close, which not only saves fuel, but will prevent the plants from being baked. If the temperatures be low the first thing in the morning, no watering or damping-down should be done until the thermometer indicates the required temperature. At night, when extra firing is required, it should be the rule to sprinkle the paths in the hottest houses, the cooler divisions being comparatively dry.

As regards watering, it is not necessary to examine all plants every day, but only those that are on blocks or in very shallow pans. Here the plants are looked over at least once a week in winter, twice in summer, and, to those that require it, a thorough soaking is given. Of course there are exceptions to this rule. If a plant is found in the interval to require water, it ought to be supplied at once. It is very essential that all Orchid houses should be well ventilated, both at top and bottom, as no doubt the majority of Orchids delight in fresh air when admitted with discretion.

The best material for potting is good bracken root fibre and clean sphagnum moss, though some few terrestrial Orchids require fibrous loam

to grow in. In Belgium and other places on the Continent, the root-fibre of Polypodium vulgare is largely used, and I believe with every success. Here it has been tried on such plants as Cattleyas and Odontoglossums: the Cattleyas have certainly improved, but in the case of the Odontoglossums, no improvement on our English fern-root peat has been observed. In mentioning this, I do not recommend any one to use Polypodium fibre, except as an experiment, until its value has been more thoroughly tested.

The East Indian house will contain such heat-loving species as Aërides, Saccolabiums, Phalænopsis, Dendrobiums that are now making their growth, such Vandas as Lowii, Sanderiana, and Denisoniana, the Angræsums, also many species of Cypripedium, as Stonei, bellatulum, niveum, concolor, Rothschildianum, Lawrenceanum, etc. I often wonder, when looking round various Orchid collections, why the beautiful genus Aërides is not more generally cultivated. Rarely do I see any large quantity of these plants with their foliage down to the top of the pot. More often I see them with bare stems, a foot or more in length, with five or six pairs of leaves at the top, and the cause of this is probably due to over-flowering, irregular temperature, and being kept too dry during the resting season, both at the root and in the atmosphere. Where the proper treatment is given, their cultivation is comparatively easy. The following varieties should be grown in this house:—A. affine, Houlletianum, Lobbii, odoratum, Savageanum, suavissimum, Larpentæ, crispum, Fieldingii, Lawrenceæ, and its yellow-tinted variety, Sanderianum; while maculosum and its variety, Schröderæ, both grow and root freely in a shady corner of the Cattleya house.

From now until the end of February is a good time to re-pot or top-dress any of these plants that require it. The ordinary flower-pot is preferable for Aërides, etc., to baskets, the plants being more easily managed and the roots less disturbed than when wooden baskets are used. When re-potting, pick out all the old decayed moss; and if any roots are clinging to the sides of the pot, carefully ease them from it by using a sharp, thin penknife. See that the pots and crocks are perfectly clean before using them. Place the plant in the centre of the pot; put a few large crocks at the bottom, after which replace the roots; and in so doing work in among them clean picked sphagnum moss and crocks—about one-half of each—fill up to within half an inch of the rim, pressing it down moderately firm, and finish off with good living sphagnum. Any of the large fleshy aerial roots that are long enough may be carefully pegged down on the surface, and in time these will root into the moss. The more roots enticed down in this way the better, as the plants grow more vigorously and retain their bottom leaves for a much longer period than when the roots are rambling about in the air. After re-potting, the plants require no water for two or three days, after which give them a thorough soaking. The moss on the surface will soon become dry again, when it should be sprinkled over with a fine rose

watering-can; keep the sphagnum growing in this way until the plant has re-established itself again, when more water may be given. If the plants are not strong, or well rooted, remove their flower-spikes for one season, and give them a generous growing treatment throughout the year. All newly-imported Aërides should be potted in crocks only, keeping the stems and lower leaves well syringed to prevent undue shrivelling. As soon as new roots appear, pot as previously advised.

In the Cattleya, or intermediate, house are principally grown Cattleyas, Lælias, Epidendrums, Cœlogynes, Miltonias, Sobralias, Cymbidiums, Vanda tricolor, and V. suaris; also the cooler growing Cypripedium × Leeanum, C. × Harrisianum, C. insigne, and Selenipedium Schlimii. Cattleyas are, practically speaking, at rest in January, though C. Trianæ and its many beautiful forms will now be coming into bloom. They will, therefore, require more water at the root to fully develop their flowers. Cœlogyne cristata and its varieties will also be flowering. They should receive a good watering of liquid cow-manure before the spikes open, to help them through their flowering period. When in bloom, very little, or no water must be given, as if kept too moist their flowers quickly become spotted.

Vanda tricolor and V. suavis should be placed at the coolest end of this house. Keep the atmosphere around them constantly moist, and give the plants a moderate supply of water at the root, as if kept too dry their leaves will shrivel, turn yellow, and fall off. They delight in an abundance of fresh air, therefore the ventilators nearest to them should never be entirely closed. The best time to re-pot them is about November, and in precisely the same way as advised for Aërides. Masdevallias of the Chimæra section do best in teak baskets, hung close to the roof-glass in this house during the cold winter months. They require plenty of water at the root always, and on bright sunny days may be taken down and well syringed with tepid rain-water, which not only cleanses the foliage from insects, but helps to ward off the much-dreaded black spot.

The Mexican house will contain such plants as Lælia anceps and its many pretty varieties; also L. autumnalis, L. majalis, L. albida, etc. After these plants have done blooming, no time should be lost in supplying them with fresh material to root in. Use shallow, well-drained pans or baskets, keep the plants well elevated above the rim, and pot firmly with the best fibrous peat and moss, using a few large pieces of crock with it, so as to allow the water to pass freely through. After re-potting, only enough water should be given to prevent them from shrivelling, or the young roots from damping off, as they are very liable to do if too much water is used before the plants are re-established. Keep the temperature cool, and on the dry side, until the new growths appear, when both may be gradually increased.

In the cool house, the principal work at this time of the year is watering, and thoroughly overlooking and cleansing the plants from all insect pests.

Where many thrips and green-fly abound, it is a good plan to choose a fine morning, and dip the plants into some safe insecticide. It is rather difficult to advise as to which is the best, so many preparations being now made. For many years past I have used nicotine soap for this purpose, and have always found it safe and effectual, mixing it according to directions given with it.

ORCHID PORTRAITS.

PORTRAITS of the following Orchids have recently appeared in the under-mentioned works.

BOTANICAL MAGAZINE.

Two Orchids appear in the December number of this work, viz.:—

MICROSTYLIS SCOTTII, Hook. f., a species with elegantly variegated leaves, and dense spikes of dull purple flowers with a greenish-yellow lip; t. 7268.

AGANISIA IONOPTERA, Nicholson, a pretty little species, named in allusion to its violet petals; t. 7270.

LINDENIA.

The December number of this work contains the following:—

CATTLEYA × HARDYANA, Rchb. f., VAR. GARDENIANA, Hort., a form of this very variable natural hybrid in which the colour of C. Warscewiczii predominates over that of the other parent; t. 353.

MILTONIA VEXILLARIA, Benth., VAR. VIRGINALIS, Hort., a pure white variety; t. 354.

VANDA INSIGNIS, Blume; t. 355.

CATTLEYA DOWIANA VAR. STATTERIANA, Hort., a handsome variety from which most of the crimson has vanished on the sides of the lip; t. 356.

ORCHID ALBUM.

The last issue of the *Orchid Album* contains:—

CYPRIPEDIUM × PITCHERIANUM, Rchb. f., WILLIAMS' VAR., a handsome hybrid between C. × Harrisianum superbum and C. Spicerianum magnificum; t. 453.

DENDROBIUM CILIATUM, Parish, a pretty little Burmese species, with pale yellow flowers and a deep yellow lip veined with dull red, and ciliate; t. 454.

CYPRIPEDIUM × ORPHANUM, Rchb. f., a fine hybrid, named from the circumstance of the record of its parentage being lost, though there can be little doubt that it was derived from C. Druryi and C. barbatum; t. 455.

CATASETUM LONGIFOLIUM, Lindl., a handsome and interesting Demeraran species, which grows pendant from the stems of the Ita Palm

(Mauritia flexuosa), and produces drooping racemes of quaint dull reddish-brown and orange flowers; t. 456.

REICHENBACHIA.

The last part issued completes the first volume of the second series, which is dedicated by special permission to Her Majesty the Empress of Russia. It contains:—

CYPRIPEDIUM × CASTLEANUM, Rolfe, a brightly-coloured hybrid between C. hirsutissimum ♀ and C. superbiens ♂, raised by Mr. Maynard; t. 45.

ODONTOGLOSSUM CERVANTESII, Llav. & Lex., VAR. DECORUM, Rchb. f., the best form of this well-known plant; t. 46.

CATTLEYA AMETHYSTOGLOSSA, Linden & Rchb. f., whose somewhat tangled synonymy is here pointed out; t. 47.

LÆLIO-CATTLEYA × ARNOLDIANA, Rolfe, a very handsome hybrid, said to have been raised from Lælia purpurata and some variety of Cattleya labiata; t. 48.

XENIA ORCHIDACEA.

The sixth part of the third volume of this work, issued in November last, by Dr. Kränzlin, contains figures of the following:—

DENDROBIUM ANTENNATUM, Lindl., p. 92, t. 251, fig. 1.

D. COMPRESSUM, Lindl., p. 93, t. 251, fig. 2.

AËRIDES LAWRENCEÆ, Rchb. f., VAR. AMESIANA, Sander, p. 94, t. 252.

A. ORTGIESIANUM, Rchb. f., p. 95, t. 253, fig. 1.

CATASETUM LIECHTENSTEINII, Kränzl., p. 96, tt. 253, fig. 2, 254, fig. 2.

C. TRULLA, Lindl., p. 97, t. 253, fig. 3.

LÆLIA REICHENBACHIANA, Wendl. & Kränzl., p. 97, t. 254, fig. 1.

PAPHINIA GRANDIS, Rchb. f., p. 98, t. 255.

CŒLOGYNE MICHOLICZIANA, Kränzl., p. 100, t. 256.

OCTOMERIA SEEGERIANA, Kränzl., p. 101, t. 257, fig. 1.

PLEUROTHALLIS CRYPTOCERAS, Rchb. f., p. 102, t. 257, fig. 2.

RŒPEROCHARIS PLATYANTHERA, Rchb. f., p. 103, t. 258, fig. 1.

R. BENNETTIANA, Rchb. f., p. 104, t. 258, fig. 2.

R. URBANIANA, Kränzl., p. 104, t. 258, fig. 3.

R. ALCICORNIS, Kränzl., p. 105, t. 258, fig. 4.

PHOLIDOTA LAUCHEANA, Kränzl., p. 106, t. 259, fig. 1.

PLEUROTHALLIS PACHYGLOSSA, Lindl., p. 106, t. 259, fig. 1.

SACCOLABIUM GEMMATUM, Lind., p. 107, t. 260, fig. 1.

DENDROBIUM LISTEROGLOSSUM, Kränzl., p. 108, t. 260, fig. 2.

Perhaps the most interesting species is Lælia Reichenbachiana, a small species about four inches high, with one- or two-flowered scapes, and small blush flowers with some purple veining on the lip. It is said that only two plants are known in cultivation—one in the collection of M. Wendland, of

Herrenhausen, the other in that of Prince Lichtenstein, Eisgrub, Austria. Dendrobium listeroglossum, said to have no affinities, is evidently a near ally of D. parcum, Rchb. f., if not synonymous with it.

Many of the figures are very diagrammatic, some of them in outline only, and leave far too much to the imagination of the observer. A few of the plates are partially coloured.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

A CASUAL visitor to the last Floral Meeting of the above Society, held in the Drill Hall, James Street, Victoria Street, Westminster, on December 13, 1892, would hardly have imagined that it was the dullest season of the year, so brilliant was the display. Orchids formed one of the chief attractions, because of the number of new and rare plants which were present. The president of the society, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a fine collection of Calanthes, conspicuous among which were about a dozen large specimens of C. × Veitchii splendens, with heavy trusses of rosy-crimson blooms; C. × V. lactea with creamy white flowers; C. V. × nivea, having white flowers and a differently shaped lip; and C. × burfordiense with crimson flowers. A fine strong plant of Masdevallia Gargantua attracted notice, on account of its large, fleshy, tubular flower, the interior of a deep wine-red colour, and the outer surface, as well as the tails, green. M. × Hincksiana with several pale yellow flowers was also present, together with a fine spike of Lælia autumnalis atrorubens, with flowers somewhat larger than usual, and very richly coloured. Dendrobium × burfordiense (D. Linawianum ♀ × D. aureum ♂) reminded one of a poor form of D. nobile. The plant was vigorous and bore several flowers, the sepals and petals blush-rose, and the lip deep red in the centre, with a white zone around it, and a pink tip. But the chief attraction in this group was a pan, about fourteen inches in diameter, of Sophronites grandiflora. There were over forty flowers on this specimen, and their brilliant scarlet colour looked remarkably warm against the healthy dark green foliage. A Silver Banksian Medal was awarded to the plant.

C. E. Smith, Esq., Silvermere, Cobham, Surrey, exhibited a huge specimen of Cypripedium insigne, for which a Silver Banksian Medal was awarded. There were ninety-six blooms on the plant, and their colouring and size were really first-class. It was stated that it had taken more than ten years to grow the specimen into such a fine condition.

S. G. Lutwyche, Esq., Oakfield, Beckenham (gr. Mr. J. May), also exhibited two good specimens of Cypripedium insigne, bearing in the aggregate one hundred and thirty-nine flowers, and received a Bronze Banksian Medal. Besides these were two large plants of Zygopetalum Mackayi, with one hundred and sixteen large flowers between them.

C. W. Fincken, Esq., Hoyland Hall, Barnsley (gr. Mr. Milburn), exhibited a Lælia named Finckeniana, which received an Award of Merit. The plant, which was a strong one, and bore five flowers on the spike, was imported from Mexico, with a lot of Lælia anceps, about three years ago. The chaste and well-formed blooms are almost exactly like those of a medium sized L. anceps Dawsoni, except that the side-lobes of the lip do not nearly meet above the column. The plant appears to be a natural hybrid between a white form of L. anceps and either L. autumnalis or L. albida.

The Duke of Northumberland, Syon House (gr. Mr. G. Wythes), sent a splendid group of Cypripedium insigne, which formed a bank about thirty feet long. The plants were well grown, in twenty-four pots, and were relieved behind with large plants of Calanthe × Veitchii.

Philip Crowley, Esq., Waddon House, Croydon, exhibited the rare Angræcum pellucidum, having four large leathery leaves and two pendulous spikes, each bearing between twenty and thirty semi-transparent blooms.

G. D. Owen, Esq., Selwood, Rotherham (gr. Mr. B. Watts), obtained an Award of Merit for the Selwood variety of Cattleya amethystoglossa, with creamy sepals and petals spotted with bright crimson; and Lælia anceps Oweniana, a plant bearing three ordinary blooms.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. W. Stevens), exhibited Masdevallia × McVittiæ, a hybrid between M. tovarensis ♀ and M. Veitchii ♂, for which an Award of Merit was given.

W. Wells, Esq., Broomfield, Sale, obtained a First-class Certificate for Cattleya labiata alba. It is an almost pure white variety, with a slight stain of pale yellow deep down in the throat. The plant was not very vigorous, and bore only one flower, but its size and beauty could not fail to make a deep impression.

R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr. Mr. H. Simpkins), exhibited several fine Cypripedium blooms, among them being C. × Morganiæ, C. × Leeanum, C. × Carrierèi (C. superbiens ♀ × C. venustum ♂), C. × Chas. Canham, C. × Mrs. Canham, C. × orphanum, and C. × enfieldense (C. Lawrenceanum ♀ × C. Hookeræ ♂), the latter being a particularly highly-coloured variety. A healthy plant of the remarkable Pleurothallis punctulata came from the same exhibitor. The leaves are glaucous, and the flowers soft greenish-yellow with purple dots, and a sombre purple, very conspicuous lip. It is believed to be the only plant in cultivation. It received a Botanical Certificate.

C. W. Lea, Esq., Parkfield, Hallow (gr. Mr. A. G. Catt), exhibited Vanda teres, and its variety alba, together with a spike of Lælia × Trese-deriana with seven flowers.

W. E. Brymer, Esq., Puddletown, Dorchester (gr. Mr. J. Powell), sent a spike of the rare Dendrobium Treacherianum with six flowers, for which a Botanical Certificate was awarded. A long straggling spike of Oncidium insculptum, with numerous dark brown flowers, also came from the same collection.

B. D. Knox, Esq., Ardmillan, Caversham, exhibited a fairly strong plant of Cattleya Alexandræ, with one bloom. A spike bearing three blooms was also exhibited by Messrs. Linden, of Brussels, together with a dried spike, showing that in a wild state as many as a dozen flowers are produced.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, exhibited a large and beautifully clear primrose-yellow and white flower of the incomparable Cypripedium insigne Sanderæ.

Dendrobium Phalænopsis Schroederianum, having eight large blush flowers on the spike, was shown by Wellbore Ellis, Esq., Hazelbourne, Dorking.

Among the trade growers, Messrs. F. Sander and Co., St. Albans, contributed a fine collection of Cypripediums, chief among which were C. × Calypso, Oakwood var.; C. × Sallieri, and its variety superbum, a fine plant with five flowers; C. × Lynchianum (C. Spicerianum ♀ × C. selligerum majus ♂), a hybrid with a rosy upper sepal bordered with white, and a green stain at base; C. × Johnsonianum (C. × nitens magnificum ♀ × C. Lawrenceanum ♂), the blood of the pollen parent being most conspicuous, to which a First-class Certificate was awarded; C. × Alcides superbum (C. insigne albo-marginatum ♀ × C. hirsutissimum ♂); and C. Chamberlainianum, a strong plant, bearing two brilliant flowers on a scape not exceeding four inches in height. The deep purple-flowered Lælia Gouldiana, Cattleya O'Brieniana with lilac blooms, and the charming little Lælia × Oweniana—the flowers of which remind one somewhat of Galeandra Baueri—were also very attractive. Masdevallia × Measuresiana (M. tovarensis ♀ × M. amabilis ♂), flowers white inside, pink outside, and M. × Courtauldiana, with lilac-purple flowers, were also shown, as well as spikes of Phalænopsis grandiflora, and a strong Catasetum sp., bearing nine flowers, with dark chocolate blotches on a pale green ground, and a creamy helmet-shaped lip, speckled with purple outside, and blotched inside, with the minutely fringed white margin.

Messrs. J. Veitch and Sons, Chelsea, sent several hybrids, the most remarkable of which was Sophro-cattleya × Calypso (Sophronitis grandiflora ♀ × Cattleya Loddigesii ♂), which obtained a First-class Certificate. The flowers remind one very forcibly of those of Cattleya Loddigesii, but

approach those of the Sophronitis in colour, though with a brilliant yellow throat, as in the Cattleya parent. This hybrid was raised about fifteen years ago by Mr. Seden, and had been already in bloom nineteen days before it was brought to the Drill Hall.

Cypripedium × Arete was the name given to a new hybrid between C. concolor ♀ and C. Spicerianum ♂, which received an Award of Merit. The leaves were about two or three inches long, and mottled with two not very decided shades of green. The dwarf slender scape bore a single flower, about half as large as that of C. Spicerianum, the colour creamy, speckled in great profusion with rose dots, the upper sepals, base of the petals, and edge of the lips are tinged with greenish-yellow, and the staminode about intermediate in shape. It is an extremely interesting cross, but the colours are not so decided as in some of the other hybrids from C. concolor.

Among the other exhibits were Epiphronitis × Veitchii (Sophronitis grandiflora ♀ × Epidendrum radicans ♂) with a few brilliant flowers; Selenipedium × Cleola (S. Schlimii albiflorum ♀ × S. Boissierianum ♂), a pretty hybrid with waxy flowers tinged with rose; Cypripedium × Œnone (C. Hookeræ ♀ × C. superbiens ♂) and C. × Pheres (C. insigne ♀ × C. hirsutissimum ♂), which is really a variety of C. × Alcides.

Messrs. Hugh Low and Co., Clapton, contributed a select group, noticeable among them being a fine plant of Cypripedium × Leeanum with eighteen blooms, the waxy Angræcum sesquipedale, Saccolabium giganteum with a fine truss of white and rose flowers, several plants of Cypripedium bellatulum, C. Chamberlainianum, C. Dayanum, Selenipedium × Sedeni candidulum, an almost pure white Odontoglossum crispum, and two plants of Vanda Amesiana in full bloom.

Messrs. B. S. Williams and Son, Upper Holloway, contributed the remarkable Cypripedium × enfieldense raised by Mr. Ayling, gardener to Mr. A. J. Hollington, Forty Hill, Enfield (also exhibited by Mr. Measures), Calanthe × Oweniana (C. × Veitchii ♀ × C. × nivea ♂) with rose and white blooms, and a hybrid Cypripedium from C. Hookeræ ♀ and C. superbiens ♂, in reality a form of C. × Œnone.

Messrs. Pitcher and Manda exhibited twelve distinct variations of Cypripedium insigne, a fine form of C. × Niobe, and C. × venusto-Spicerianum.

Mr. P. MacArthur, Maida Vale Nursery, exhibited a small plant of the very rare Odontoglossum Kramerianum, having two blush-white flowers with purple lip and a square yellow spotted crest.

The next meeting of the Royal Horticultural Society will be held on January 17th, 1893, when the Orchid and other Committees will meet at the usual time.

NOTICES.

The ORCHID REVIEW will be published regularly on the first of each month.

The Editors invite short communications on interesting subjects, also portraits, etc., of rarities.

All communications (except wholesale orders), and Books for review, should be addressed :—The EDITOR OF THE ORCHID REVIEW, 54, Hatton Garden, London, E.C., and should be sent as early in the month as possible.

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[Vol. I.] JANUARY, 1893. [No.t yellow
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THE ORCHID REVIEW

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

1893

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THE ORCHID REVIEW.

VOL. I.] *FEBRUARY*, 1893. [No. 2.

TO OUR READERS.

THE inauguration of the ORCHID REVIEW has called forth a series of congratulatory letters, not only from various parts of the United Kingdom, but also from the Continent and America, and we take this, the earliest opportunity of thanking our numerous correspondents for their good wishes and kind co-operation, both of which are much appreciated, and augur well for the future.

Our first number has been very favourably received, both by the horticultural press, and by numerous amateur and professional growers, all of whom express the opinion that it will prove very useful to cultivators of Orchids. Several correspondents have offered suggestions for making the work of the widest possible interest, which, so far as circumstances permit, we shall endeavour to act upon. One or two are embodied in the present number, and we shall at all times be glad to receive suggestions for the improvement of the work.

We particularly invite short communications of an interesting character, also photographs of flowers of showy rarities suitable for reproduction in our pages. Many such, of which no figure exists, are in cultivation in various collections, and it seems desirable to remedy the deficiency whenever the necessary materials can be obtained.

We hope our readers will make the REVIEW known as widely as possible among their Orchid-growing friends, so as to enlarge its sphere of usefulness, because its value must depend to a large extent upon the amount of support received, and we desire to make it of a progressive nature in the best sense of the term.

A BRITISH HYBRID ORCHID.

Natural hybrids among Orchids are not only very numerous, but very widely diffused. A most interesting British example is described and figured by Mr. Rolfe in a recent number of the *Annals of Botany* (vol. vi. p. 325, t. 18). It is a generic cross, between Orchis maculata and Habenaria viridis, which was sent to Kew for determination by C. H. S. Perceval, Esq., of Longwitton Hall, Morpeth, in July, 1891. It was found in a field at Longwitton, Northumberland, growing with the two species just named, together with Orchis incarnata, Habenaria chlorantha, H. bifolia, and Listera ovata. It possesses unmistakable evidence of a combination of characters of the two parent species, as is evident from the plate, and the author states that the same holds good as to colour. Instead of the pale lilac of the Orchis parent there was a strong suffusion of green derived from the Habenaria, which served to modify the former colour. The flower of the hybrid bears a considerable resemblance to that of Orchis maculata, especially in the spreading sepals and the shape of the lip, yet the latter organ has the narrower more acute side lobes, and very small mid lobe, which strongly indicate the influence of the other parent. The spur is precisely intermediate in character, having neither the long, narrow, and tapering form of the Orchis, nor the short, saccate form of the Habenaria, but is a linear-oblong, slightly clavate body, barely over a line in length. The author follows the Candollean rule of compounding a name from that of the two parent species, and has named the hybrid Habenari-orchis × viridi-maculata. The only other British hybrid Orchid known is Orchis latifolio-maculata, which has been recorded from Hampshire and from Plymouth.

ODONTOGLOSSUM LUTEOPURPUREUM COBBIANUM.

The varieties of Odontoglossum luteopurpureum, like those of O. crispum, seem almost endless. The one to which the above name has been given is a strikingly handsome form, which has just flowered in the collection of Walter Cobb, Esq., Silverdale, Sydenham, Kent. The sepals are wholly deep chestnut, except a minute yellow tip, and a small area at the extreme base. The petals are of a similar shade, with the tips and marginal teeth deep yellow. From middle to base extends a broad greenish-yellow band, and along the centre of this a narrower chestnut-brown band, which imparts to the variety a very distinctive appearance. The lip is rather broad at the apex, but otherwise normal in character. It is one of the darkest forms we have seen.

THE HISTORY OF ORCHID HYBRIDISATION.

PART II.

(*Continued from page* 6.)

In 1870 the first hybrid Selenipedium appeared, and was named S. × Dominianum, after its illustrious raiser. It was the result of crossing S. caricinum with the pollen of S. caudatum, and was described as a plant of the freest growth, and with every organ intermediate between those of its two parents. Although maintaining the distinctness of this genus, Reichenbach bestowed the name of Cypripedium × Dominianum on the plant, for horticultural purposes, thus establishing a sort of dual nomenclature, which has resulted in considerable confusion.

Cypripedium × vexillarium also flowered for the first time in 1870, and was described as one of the surprises which Mr. Dominy prepares for the Messrs. Veitch. It was raised from C. barbatum and the rare C. Fairieanum, the former being the seed parent. The influence of the pollen parent, itself one of the most beautiful of the genus, preponderates in a striking manner in this hybrid, and renders it one of the most elegant yet raised.

Early in 1871, Mr. Burbridge published in the *Gardeners' Chronicle* a list of the Hybrid Orchids raised up to that period, in which occurs an additional one—namely, Aërides × hybridum—said to have been raised from A. affine and A. Fieldingii. It does not appear to have ever been described, and now seems to have been quite lost sight of.

Hitherto all the hybrids which had flowered had been raised by Mr. Dominy, in the establishment of Messrs. James Veitch and Sons, first at Exeter, and then at the Royal Exotic Nursery, Chelsea. For fifteen years his record was unbroken. But others, attracted by his success, at length entered the field, and in 1871 the work of another operator reached the flowering stage. Mr. Dominy's work, however, had already ceased, and before commencing a new epoch we may complete our record of the results of his operations.

Lælia × Veitchiana flowered for the first time in 1874, and was described as a glowing thing, very much like L. × exoniensis. It was raised from the old Cattleya labiata and Lælia crispa, the former said to have been the seed parent. It was awarded a First-class Certificate by the Royal Horticultural Society.

Cattleya × felix was described in 1876, but is said to have been one of the oldest seedlings raised by Mr. Dominy. It is stated to be a cross between Lælia crispa and Cattleya Schilleriana. It seems to have been almost lost sight of at the present day.

Lælia × caloglossa flowered for the first time early in 1877. It was described as a very lovely new hybrid. Cattleya labiata is said to have been

one of the parents, and Lælia Boothiana or L. crispa—probably the former —the other. The flowers are described as like those of Lælia Boothiana, but of a lighter purple, and the lip with a white border and two sulphur-yellow blotches on the disc.

In 1877 Cattleya × picturata also flowered, and was described by Reichenbach. Its acknowledged parents are Cattleya guttata and C. intermedia. Thus it was a very interesting cross, as these very species are clearly the parents of C. × intricata, Rchb. f., a natural hybrid, which appeared in 1884. Mr. Dominy's plant seems to have been lost sight of, but it would be a very interesting matter to be able to compare the two together.

Dendrobium × Dominianum, the first hybrid in the genus, was described in 1878, but it was then stated to have been obtained by Mr. Dominy a very long time ago. Its parents were D. Linawianum and D. nobile, the latter being the seed parent. It was described as a very ornamental Dendrobium, and very curious from the *point de vue* of science.

Mr. Dominy's last hybrid was a remarkable and very handsome one. It flowered for the first time in August, 1878, and was described by Reichenbach as Lælia × Dominiana. It was then stated to be a cross between Cattleya Dowiana and some Lælia, probably L. elegans. This, however, is clearly incorrect, so far as the second parent is concerned, for the hybrid bears the strongest possible traces of Lælia Boothiana, which was almost certainly the other parent. This was a fitting climax to Mr. Dominy's labours, for if depth and richness of colouring be the criterion of excellence this hybrid is unsurpassed among this raiser's productions, while in size and shape it leaves nothing to be desired.

This exhausts the list of Mr. Dominy's hybrids, which accordingly are seen to be twenty-five in number. Phaius × inquilinus, however, is a complete mystery, thus reducing the number to twenty-four. These comprise six Cattleyas, one Lælia, and six crosses between the two genera, two Calanthes, one hybrid between Calanthe and Phaius, two Cypripediums, one Selenipedium, one Dendrobium, one Aërides (probably lost), and three hybrids of the Anœctochilus group. A period of twenty years elapsed between the flowering of the first of the group, Calanthe × Dominii, and the last, Lælia × Dominiana, so that they averaged scarcely over one a year.

These results were indeed remarkable, and although in succeeding years their numbers were more rapidly augmented, the name of Mr. Dominy will ever be remembered as the pioneer of this interesting and promising branch of the gardener's art. Nor were his experiments solely confined to Orchids, as several other remarkable hybrids were raised by him, though these are outside the scope of our inquiry.

In 1858 the Exeter Horticultural Society awarded Mr. Dominy a Silver Medal for his experiments in hybridisation, and in 1880, on the occasion

of his retirement from the service of Messrs. Veitch, the Council of the Royal Horticultural Society presented him with their large Gold Flora Medal for his successful labours as a raiser of hybrid Orchids, Nepenthes, and other plants.

The first successful follower of Mr. Dominy appears to have been Mr. Cross, gardener to Lady Ashburton, of Melchet Court, Hampshire, who obtained Cypripedium × Ashburtoniæ by crossing C. barbatum with the pollen of C. insigne. This hybrid, which is quite intermediate in character, flowered for the first time in 1871, when it was described by Reichenbach.

The same raiser added Cypripedium × Crossianum, in 1873. Its parents were C. insigne and C. venustum, the former being the seed parent. Both it and the preceding were distributed by Messrs. James Veitch & Sons, of Chelsea.

Mr. Seden next appeared upon the scene, having succeeded Mr. Dominy in the work at the Royal Exotic Nursery. His first hybrid was a remarkable and very handsome one. It was obtained by crossing Selenipedium longifolium with the pollen of S. Schlimii, and *vice versâ*, both crosses flowering for the first time in 1873, and proving absolutely identical. This hybrid was a great horticultural acquisition, and in some respects also a surprise. Neither of the parents can be placed in the first rank as decorative plants. One is a free grower, with large flowers of little beauty, the other a "miffy" grower with small but brightly coloured flowers, but the good qualities of both parents were fortunately combined in the offspring. A plant of the most robust constitution, remarkably floriferous, and with well-shaped flowers of a most pleasing shade of pink, this hybrid was soon utilised for further experiments, with the result that our gardens have been enriched by a race of hybrids of the greatest possible value from a decorative standpoint.

Another of Mr. Seden's hybrids which flowered during 1873 also established a record, being the first of the series of secondary hybrids—*i.e.*, hybrids in which one or both parents is itself of hybrid origin. It was described under the name of Cattleya × fausta, and said to be "just intermediate between C. Loddigesii, as the ♀, or seed parent, and C. × exoniensis, as the ♂, or pollen parent." Two forms were described at the outset—the typical form, with rosy-lilac sepals and petals and a paler lip, and the variety radicans, distinguished by the presence of a number of dark purplish veins and streaks on the anterior part of the lip. Thus it afforded an indication of what has since been repeatedly confirmed, namely, that secondary hybrids are especially variable, plants raised from the same seed-pod often exhibiting great dissimilarity between themselves.

Early in 1874 Dendrobium × Ainsworthii flowered for the first time, being the work of a new operator. It was raised in the collection of Dr. Ainsworth, of Lower Broughton, near Manchester, by Mr. Mitchell, between D. aureum and D. nobile, the former being the seed-parent. It was

deservedly awarded a First-class Certificate by the Royal Horticultural Society, in February, 1874, on the occasion of its flowering for the first time. The seed was sown about seven years previously. It has since been recorded that plants of the same cross were raised by Mr. West, at the Fairfield Nursery, near Manchester, at about the same time.

Immediately afterwards another genus was added to the list, when Chysis × Chelsoni flowered for the first time. It was raised by Mr. Seden, and its parentage is recorded as C. Limminghei ♀ × C. bracteseens ♂, though Reichenbach suggested C. lævis as the pollen parent. It was awarded a First-class Certificate.

Lælia × flammea is a very interesting secondary hybrid, which also flowered in 1874. It was obtained by Mr. Seden, by crossing L. cinnabarina with the pollen of L. × Pilcheri. Its flowers are much larger than those of the mother plant, and of a peculiar flame-colour, then quite unique, though two or three other seedlings from L. cinnabarina have since been raised which present the same peculiarity.

Zygopetalum × Sedeni, the first hybrid in the genus, also flowered for the first time during 1874. Its parents are stated to have been *Z.* Mackayi and *Z.* maxillare. It was dedicated to Mr. Seden, to whose assiduous efforts its existence was due.

Cypripedium × Arthurianum, which flowered in the autumn of this year, was also raised in the Royal Exotic Nursery, from C. insigne crossed with the pollen of C. Fairieanum. A single seedling only was obtained. The plant was dedicated to the late Mr. Arthur Veitch. The influence of the pollen parent is much less marked than usual, being chiefly apparent in the undulate petals; it is nevertheless one of the most distinct hybrids yet raised, the shape and markings being exceedingly graceful.

The three hybrids of 1875 were all Cypripediums, each of them decided acquisitions as decorative garden plants. They were all raised by Mr. Seden in the Royal Exotic Nursery.

Cypripedium × tessellatum was the result of crossing C. concolor with the pollen of C. barbatum. Its flowers are of a pale buff-yellow heavily suffused with rose-purple and with some darker markings. The coloration of this beautiful hybrid is quite unique in the genus, but its constitution is much less vigorous than could be wished, a character evidently derived from the mother plant.

Cypripedium × euryandrum owes its descent to the crossing of C. barbatum with the pollen of C. Stonei, and thus was the first member of the group with racemose flowers. It is very distinct and handsome, and presents a combination of the characters of the parent species, though the influence of the pollen parent decidedly preponderates. It is noteworthy that of the seven hybrid Cypripediums hitherto raised, C. barbatum had been one of the parents in no less than five instances.

Cypripedium × Marshallianum was derived from C. venustum pardinum and C. concolor, the latter being the pollen parent. It is a very distinct and charming little plant, in which the influence of the pollen parent preponderates to a very marked degree.

Hybrid Orchids were now decidedly on the increase, for at least ten flowered for the first time during 1876, and the work of three new operators came before the public, as will presently be seen.

Cypripedium × œnanthum, the first secondary hybrid in the genus, was described early in the year. It was raised by Mr. Seden, by crossing C. × Harrisianum with the pollen of C. insigne Maulei, and thus establishes a record of another kind, being the first instance of a hybrid Orchid being successfully used as the seed-parent. The theory of the sterility of hybrids, if ever maintained with regard to plants, must have received a shock with the flowering of this plant. As in the case of Cattleya × fausta, an unusual amount of variability presented itself between the different plants obtained from this cross. It is a very brightly-coloured and attractive hybrid.

Another hybrid Dendrobium now appeared, being raised by Mr. Seden from D. moniliforme (D. japonicum) crossed with the pollen of D. aureum. It received the name of D. × endocharis, in allusion, we suppose, to the satisfaction with which the opening of its first flowers was regarded. Its chaste flowers are pure white, with a handsomely pencilled disc, and deliciously fragrant.

The next hybrid was Selenipedium × stenophyllum, raised in the collection of John C. Bowring, Esq., of Forest Farm, Windsor, who thus gave evidence of having turned his attention to hybrids. It was obtained by crossing S. Schlimii with the pollen of S. caricinum.

Cypripedium × pycnopterum, the first hybrid from C. Lowii, was obtained by Mr. Seden from C. venustum crossed with the pollen of the species just named. It is a very distinct hybrid, in which the influence of the pollen parent greatly preponderates.

Cypripedium × superciliare was obtained by crossing C. barbatum with the pollen of C. superbiens. The flowers are large and intermediate in character, though inclining to the light colour of the pollen parent. It was raised by Mr. Seden.

Dendrobium × rhodostoma, which next appeared, was a decided novelty, being obtained by crossing the rare D. Huttonii with the pollen of D. sanguinolentum. It bears a considerable resemblance to the latter. It is a free grower and very floriferous. Mr. Seden was the raiser.

The next hybrid which flowered was the work of a new operator. It was raised in the collection of the late W. Leech, Esq., of Oakley, Fallowfield, Manchester, by Mr. William Swan, by crossing Cypripedium Dayanum with the pollen of C. barbatum, and was named C. × Swanianum, in honour of the raiser. It was the first seedling from C. Dayanum.

Cypripedium × marmorophyllum, the first cross from C. Hookeræ, was obtained by Mr. Seden, by crossing that species with the pollen of C. barbatum. It is a bold and richly-coloured hybrid, much resembling C. Hookeræ in the foliage, but with the influence of the pollen parent more marked in the flower.

Cattleya × Mitchelli was raised by Mr. Mitchell, in the collection of Dr. Ainsworth, of Lower Broughton, Manchester, from Cattleya Leopoldi fertilised with the pollen of Cattleya Trianæ (C. quadricolor). It was the first cross in which the last-named species had participated, and was thirteen years old when it flowered for the first time.

The last hybrid of the year was raised in the collection of Messrs. Rollisson and Sons, of Tooting, by Mr. Mylam. It is said to have been raised by crossing Cattleya granulosa with the pollen of Lælia crispa. It was called Lælia × Mylamiana, and was well compared with L. × devoniensis. From the published figure, indeed (*Gardeners' Chronicle*, 1876, ii. p. 741, fig. 138), we may safely infer that it originated from the same parentage. Cattleya guttata, therefore, not C. granulosa, must have been the seed parent; which is the more probable, from the fact that the plant then called C. granulosa in gardens was really C. guttata. It is a curious coincidence that C. × Mitchelli and the present one were both raised in 1863, and flowered for the first time when thirteen years old. The latter now seems to have been quite lost sight of.

(*To be continued.*)

ANGULOA × MEDIA.

It is a source of satisfaction to be able to solve the origin of some doubtful plant by direct experiment, as has been done on several occasions. We may now record an instance in which the reverse process took place. Hybrids between Anguloa Ruckeri and A. Clowesii have been raised, first in the collection of John C. Bowring, Esq., Forest Farm, Windsor, and afterwards with Messrs. James Veitch and Sons, of Chelsea; in the latter case, A. Ruckeri was the pollen parent. Some considerable time ago an imported Anguloa (known to be such) flowered in the collection of R. H. Measures, Esq., of The Woodlands, Streatham, and was thought to be a new species. Mr. Seden, however, who saw it, at once recognised it as identical with the plant he had raised, and the determination has since been confirmed. It is a very interesting circumstance, though the two parent species are known to grow together, and therefore we need not be surprised to find a natural hybrid between them.

Anguloa × media, Rchb. f. in *Gardeners' Chronicle*, 1881, ii. p. 38.
A. × intermedia, Rolfe, *l.c.*, 1888, i. p. 798.

CYPRIPEDIUM × MORGANIÆ BURFORDIENSE.

CYPRIPEDIUM × MORGANIÆ, the *facile princeps* of hybrid Cypripediums, was raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons, of Chelsea, from C. superbiens fertilised with the pollen of C. Stonei. It flowered for the first time in 1880, and was dedicated to Mrs. Morgan, of

Fig. 3. CYPRIPEDIUM × MORGANIÆ BURFORDIENSE.

New York, an ardent amateur of Orchids. By some mistake the name was first published as C. × Morganianum, but was afterwards corrected. Soon after the original plant flowered, and revealed its sterling qualities, the same cross was effected by Mr. Spyers, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking. This was in July, 1881, and exactly eight years

later the first flowers appeared. It was named C. × Morganiæ burfordiense in order to distinguish it from the original form, which, however, it very closely resembles. A plant was exhibited at a meeting of the Royal Horticultural Society in November last, when it was unanimously awarded a First-class Certificate by the Orchid Committee. Our illustration represents a flower of this particular plant, kindly communicated by Sir Trevor Lawrence.

C. × Morganiæ bears a considerable resemblance to the rare C. Stonei platytænium, from which circumstance the latter has been supposed to be a natural hybrid with the same parentage. This, however, is impossible, as one of the species is a native of Malacca, the other of Borneo.

Cypripedium × Morganiæ, Rchb. f. in *Gard. Chron.*, 1880, ii. p. 134 (by error "Morganianum"); *id.*, 1886, ii. pp. 241, 243, fig. 49; *id.*, 1890, i. p. 264, with plate, also pp. 545-552, fig. 85: *id.*, 1892, ii. pp. 217, 218, fig. 37 (abnormal); *Journ. of Hort.*, 1887, i. pp. 232-233, fig. 42. *Orch. Album*, vii. t. 313; *Veitch Man. Orch.*, iv. p. 92, with fig.; *The Garden*, xxiii. p. 58, t. 372; *Reichenbachia*, ser. 2, i. p. 1, t. 1; *Ill. Hort.*, xxxiv. p. 16, t. 5.

FIGURES OF BRAZILIAN ORCHIDS.

The following summary of an article by M. Cogniaux in the *Journal des Orchidées* for December 15th (p. 308) will probably be read with interest:—

About twenty-five years ago M. Barbosa Rodrigues, now Director of the Botanic Garden at Rio de Janeiro, commenced the preparation of a series of figures of Brazilian Orchids, natural size, coloured, and with analytical details of floral structure. In 1871 he applied to the Brazilian Government for funds to enable him to publish the work, but without success. He therefore entered into negotiations with the Editor of the *Flora Brasiliensis*, and with the late Prof. Reichenbach, but with no better result, and he had to content himself with publishing a brief account of the novelties, in two octavo volumes, in 1877 and 1881, entitled *Genera et Species Orchidearum novarum*. They number about 570 species and 25 new genera, the value of which it was almost impossible to judge, as many of them were unrepresented in European Herbaria.

M. Cogniaux, who has been entrusted with the revision of the Orchideæ for the *Flora Brasiliensis*, has now received the drawings in question, nearly 900 in number, and speaks of them as executed with really artistic talent, and accompanied by analytical details of each species. It is a fortunate circumstance that these drawings will now be available for the work in question. It is certain that the novelties of this enormous tract of country are not yet nearly exhausted, and the forthcoming revision will doubtless prove a great advance in our knowledge of the Orchids of this interesting region.

THE DELL COLLECTION.

THE marvellous collection of Orchids cultivated at The Dell, Egham, the residence of Baron Sir Henry Schröder, has a world-wide fame, and is the admiration of all who have been privileged to see it. Whether regarded in its entirety or inspected in detail, no mere description can convey an adequate impression of its floral treasures, or do justice to the splendid specimens of cultural skill, or the rare and exceptional forms it contains. It is unique of its kind; and by a metaphor may be likened to a repository of the choicest works of art into which the best efforts of great masters only are admitted. In like manner has Baron Schröder, with the most refined taste and unerring judgment, brought together the choicest works of Nature, as displayed in the great Orchid family, and superadded to these the finest acquisitions of the hybridist. The collection has been formed by the most careful selection, during a long series of years, and its most prominent feature consists of the large number of choice, rare and unusual forms it contains. To enumerate all these would far exceed the space at our disposal, and we must therefore confine ourselves to mentioning the more salient points of this superb collection, dwelling for a moment here and there on objects of exceptional rarity and interest.

We will make no attempt at classification; the cultural requirements of the different genera are such that it is necessary in many cases to grow different species in different houses, although as far as practicable the species and varieties of each important genus are brought together under one roof, or in one compartment. This is the case with the allied genera Cattleya and Lælia, with Odontoglossum, Phalænopsis, Dendrobium, and Cypripedium. Altogether about twenty houses are devoted to Orchids.

The spacious Cattleya house is a house of fine proportions, erected expressly for the reception of this fine genus and its allies. Here is collected all that is rare and beautiful in Cattleya and Lælia, together with the numerous hybrids between the two genera. The first place must be assigned to a grand plant of the type species, Cattleya labiata, so rare for more than a whole generation, but now, thanks to its re-discovery, quite common. C. Trianæ is represented by the exceptionally fine forms known as Schrœderiana, Russeliana, Leeana, Dodgsoni, Osmani, and others, the two first named, we believe, being found nowhere else. Of C. Mossiæ Reineckiana, the most admired form of this old favourite Cattleya, there are several healthy specimens, also of C. Mossiæ Wageneri, and other varieties of merit. Other allied forms, as C. Mendeli, C. Warscewiczii, C. Dowiana, C. Gaskelliana, C. Percivaliana, C. Schrœderæ, and even C. Luedde-manniana, are all represented by groups of the most select varieties, and with them the superb natural hybrid, C. × Hardyana. Other species of

Cattleya are C. iricolor, probably the only plant in Europe, C. Schrœderiana, C. Loddigesii alba, C. Skinneri alba, C. Bowringiana atropurpurea and C. Lawrenceana Vinckeana, a variety of unusual colour. Among Lælias are the rare L. Jongheana; L. purpurata, varieties alba, rosea, and dellensis; L. anceps and its varieties, Dawsoni, Stella, Hilliana, Schrœderiana, Veitchiana, Williamsii, Sanderiana, and many other specially selected forms; also the natural hybrids, L. × Crawshayana and L. × porphyritis, both extremely rare. Of artificially raised hybrids of Cattleya and Lælia there is a grand array, notably Cattleya × Empress Frederick, unique, C. × citrino-intermedia, Lælia × Euterpe, L. × flammea, &c., and a series of Lælio-cattleyas, of which the oldest of them, L. × exoniensis, still takes the lead, being closely followed by such grand things as L. × bella, L. × callistoglossa, L. × Dominiana, L. × Sedeni, L. × Victoria, the superb L. × Digbyanó-Mossiæ, and others. Several fine forms of the natural hybrids L. × elegans and L. × Schilleriana are also represented. With this group may be mentioned the bigeneric hybrids, Sophrocattleya × Batemaniana and S. × Calypso, all the plants of the first named being at The Dell.

We next turn to another great South American genus that claims an equal rank in the aristocracy of Orchids, viz., Odontoglossum. First and foremost must be mentioned O. Pescatorei Veitchianum, the *facile princeps* of the genus, here surrounded by a group of other lovely varieties of the same species. Then turning to O. crispum, we here find a group of the choicest forms ever introduced, including Schrœderianum, Veitchianum, Ballantineanum, Stevensii, Sanderiana, nobilius, apiatum, and a host of others. Among rare species and varieties are O. nævium, O. nevadense, O. Wallisii, O. polyxanthum, O. marginellum, O. maxillare, O. Edwardi ioplocon, O. Hallii magnificum, O. Cervantesii decorum, O. ramosissimum liliiflorum, O. luteo-purpureum Vuylstekeanum; and among natural hybrids O. × Leeanum, the only plant known, O. × excellens, O. × elegans, O. × Wilckeanum, in several varieties, O. × Andersonianum flavum, and many others.

Of the species and varieties of the allied genus Miltonia, M. vexillaria is in great force in many fine forms, of which Leopoldi must be especially mentioned. The rare M. Endresii is successfully cultivated, also M. Roezlii, M. Phalænopsis, M. Warscewiczii, M. Schrœderiana, still very rare, and the most showy of the Brazilian species. Among Oncidiums are the rare O. Brunleesianum, O. loxense, O. dasytyle, O. pubes, and many more.

Continuing our review of the South American Orchideæ cultivated at The Dell, we note among the Epidendrums, in addition to the showy species usually grown, E. myrianthum, E. pseud-epidendrum, E. Wallisii, E. Sceptrum, the hybrids E. × O'Brienianum and E. × dellense, the last named raised here. Diacrium bicornutum, the curious Nanodes

Medusæ and the rare Brassia Antherotes also claim attention, while the genera Anguloa, Lycaste, Maxillaria, Rodriguezia, Sobralia and Trichopilia, are all represented by the most appreciated species.

And here we may notice the Masdevallias, before turning to the Indo-Malayan genera. Only those Masdevallias that are *par excellence* horticultural species and varieties are admitted into this collection. Of such the most brilliant varieties of M. coccinea (M. Lindeni and Harryana of gardens) and M. ignea hold a conspicuous place. Besides these are M. macrura, M. tovarensis, M. triangularis, M. Veitchiana, M. Ephippium, M. racemosa, the rare but free-growing M. Schrœderiana, the finest of the M. Chimæra varieties, and allied species, as M. bella ; also the hybrids M. × Chelsoni, M. × Courtauldiana, M. × Gairiana, and M. × Hincksiana. The whole group of Masdevallias at The Dell is in the finest cultural condition possible.

We must now glance through the Indo-Malayan genera.

The great genus Dendrobium is represented by upwards of fifty natural species, of which we can only point out the very rarest to be seen in British collections, as D. Griffithianum and its variety Guibertianum, D. crepidatum, D. Draconis, D. Harveyanum, D. longicornu, D. Lowii, D. Maccarthiæ, D. rhodopterygium, the recently introduced D. Macfarlanei, D. lineale, D. atroviolaceum, the superb D. Phalænopsis, also D. superbum, varieties Burkei and Dearei. Among the rare hybrids are D. × splendidissimum grandiflorum, D. × rhodostoma, D. × euosmum leucopterum and D. × Aspasia.

We now take a rapid review of some of the Indian Vandeæ. Among the Aërides are the extremely rare A. multiflorum Veitchii, A. Fieldingi Williamsii, A. suavissimum Ballantinei, A. Lawrenceæ Sanderianum, A. Quinquevulnera albiflorum, some of them quite unique. The genus Vanda itself is represented by grand specimens of the finest and most distinct varieties of V. tricolor and V. suavis, also by the following rare forms : V. Denisoniana hebraica, V. insignis Schrœderiana, V. Parishii Marriottiana, V. teres candida, and others. In Rhynchostylis we find R. retusa Heathii, the only plant. Among Phalænopses are the phenomenal hybrid named John Seden, and of imported forms P. Aphrodite Dayana, P. amabilis aurea, P. violacea Schrœderiana, P. intermedia Brymeriana, &c. Space is afforded for Arachnanthe Cathcartii, A. Clarkei, A. Lowii, Renanthera coccinea, R. matutina, Stauropsis lissochiloides (Batemanii) Cymbidum Lowianum, probably the largest specimen in Europe. Nor must we omit to mention Cymbidum Traceyanum, the only plant known, C. eburneum Parishii, and the very fine hybrid, C. × eburneo-Lowianum.

Phaius and Calanthe are represented by all the most showy species. We must also note that remarkable hybrid between the two genera, Phaiocalanthe × Sedeniana, now finely in bloom. Among rare Cœlogynes are

C. Dayana, an extra fine plant, C. pandurata, C. tomentosa, C. ocellat maxima, C. speciosa, varieties major and albicans. In connection with th group we ought not to omit mention of Chysis Limminghei and the hybri C. × Sedeni, both extremely rare.

The collection is exceptionally rich in Cypripediums, for here ar located many rare hybrids and varieties, some unrepresented elsewher besides all that is excellent in the generally cultivated kinds, both Cypripedium and the allied South American genus Selenipediur The first to claim our attention is the remarkable Cypripedium Ston platytænium, botanically a monstrosity, but in the estimation of amateur the *acme* of Cypripedium excellence. This variety is "concentrated" a The Dell, that is to say, so many of the divisions of the original plant a were obtainable by purchase have been acquired, and some of these furthe multiplied by division. Among other fine imported or natural forms ar some splendid varieties of C. Lawrenceanum, including the *albino* name Hyeanum, C. Argus nigro-maculatum (unique), C. insigne Sanderæ, C Boxallii albo-marginatum, the rare C. Mastersianum, C. Fairieanum and C Sanderianum; also the recently introduced C. Chamberlainianum and C Exul.

The hybrids are an embarrassing element when space is limited, whic to mention and which to pass by becomes an invidious task. We venture however, to rank the following among the very best from a florist's point o view. Cypripedium × Morganiæ, probably the finest specimen in cultiva tion, and its variety burfordiense, C. × porphyrochlamys, very rare and ver distinct; C. × microchilum, C. × Aphrodite, C. × Aylingi, among th prettiest of which C. niveum has participated in the parentage; C. × vexil larium, C. × H. Ballantine, and C. × Niobe, three beautiful forms of whic C. Fairieanum is one parent; C. × Antigone, C. × Adrastus, the onl plant raised in each case; C. × tessellatum porphyreum, C. × macropterum C. × Charles Canham, three very scarce hybrids; C. × polystigmaticum C. × Germinyanum, C. × Godseffianum, C. × orphanum, and a selected variety of C. × Lathamianum, but perhaps before many of these should be placed C. × Galatea, with its bright and diversified colours. It is from the same parentage as C. × œnanthum superbum, and is in reality a variety of that greatly admired hybrid, but so distinct that for garden use it bears a separate name.

Among the Selenipediums, S. × grande and S. × Schrœderæ are represented by enormous specimens, S. × leucorrhodum by the largest of that hybrid we have seen, and there are healthy plants of S. × cardinale, S. × Sedeni candidulum, S. × Cleola, and S. × Dominianum.

The possession of such an assemblage of all that is choice and rare among Orchids must of itself induce the strictest attention to the cultural requirements of the plants, and such, in fact, they receive. We believe the

Baron is his own *chef des cultures*, being ably supported by his excellent gardener, Mr. Ballantine, and his assistant, Mr. Clark, who has special charge of the Orchids at The Dell.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

That the surroundings of Orchids have a very great influence on the quality of the plants and size of the blooms, and that we have consequently good and inferior varieties of many kinds, is now more generally known than formerly.

Dendrobium crumenatum is a very good instance of this, being an Orchid very widely distributed, and therefore existing under many differing climatic conditions. Inland, in some parts of India, and generally in Burma (excluding the Malay Peninsula), the variety found is extremely small, the bottle-shaped portion of its stems being not more than two or three inches long, and the flowers very small. The Ceylon form is distinct and of fair size. The largest variety is that found on the Malay Peninsula, and generally on every one of the hundreds of islands in the Malay Archipelago, including Sumatra, Java, Borneo, and the Philippines. This plant is a giant in comparison with the inland Burmese form, the thickened base of the pseudobulbs being a foot or more in length, and the plants often three feet to the top of the flowering stems.

The cause of these differences is the result of the long-continued influence of certain climatic conditions. The stunted plants found growing inland, in Burma, &c., have been affected by the dry seasons through which they have to pass. Those growing in Ceylon receive more moisture, and are, therefore, of a larger type. Those found in almost every island in the Eastern Seas are under the influence of rain and great heat, which exist practically throughout the year. If the various varieties are grown under glass in England, each still retains its distinctive character, so that any one acquainted with these plants in their native habitats could distinguish what district they came from.

All the varieties have one peculiarity in common which is worthy of notice. Every plant in the same district is suddenly discovered to be in flower on the same day, but a few days later not a solitary flower remains. Very pretty they look when seen in quantity, growing on scrub jungle. Many a bush is found lit up with them, and their sweet scent pervades the air. They are not easily seen when out of flower, so that the quantity takes the traveller by surprise. It is a pity that the flowers last such a short time, as, being white and sweet-scented, they are very attractive. On

observing them critically in the Malay Archipelago I found that the plan flowered throughout the year at intervals of about six weeks. It is ex tremely abundant in Singapore, where it is known as the "Pigeon Orchid in allusion to the shape of its flowers.

The inland form found in Burma is not worth growing, both plants an flowers being too small. The Ceylon and Malayan varieties are well wor a place in the Orchid house, especially the Ceylon form, which is ver compact in habit. These plants are easy to grow, and thrive best in th India house, in a teak-wood hanging basket. They require no restin season.

(*To be continued.*)

CATTLEYA WARSCEWICZII AUTUMNALIS.

CATTLEYA WARSCEWICZII (or C. gigas, as it was afterwards called) i well known to be a summer flowerer; that is, its blooms are produced o the young growths, without an interval of rest. A plant in the collection o Mr. F. L. Ames, of North Easton, Mass., U.S.A., has for several years i succession flowered in November and December, which gives it an enhance value for decorative purposes. After the growths are matured the plan rests for a considerable period, as in the case of C. labiata. This plant wa introduced by Messrs. Hugh Low & Co., of Clapton, and was purchased a an imported C. Mendeli. Its characteristics are noted in *Garden and Fore* for 1890, p. 114. It is interesting to record that a second plant has no appeared, in the collection of W. G. Marshall, Esq., Norton Manor, Taunton Somerset, where it flowered in December last. It is a magnificent thing the petals four inches long by three and three-quarters broad, and, as wel as the sepals, of a light rosy mauve. The front lobe of the lip is of the richest crimson-purple, with a light rosy mauve margin. In the throat are two large straw-coloured blotches, which are yellow on the side nearest the disc. The side lobes are rich crimson-purple at the tips, but paler behind. It has all the characteristics of C. Warscewiczii, of which it must be considered an autumn flowering variety. The character has proved to be quite constant, but why it should have departed from the habit of the type is a mystery. Cattleyas will, of course, like other plants, occasionally produce flowers out of season when they have received a temporary check of some kind, but in the present case the character has become fixed. It may be a geographical variety as C. Mendeli occurs on the eastern Cordillera of New Granada, further north than C. Warscewiczii, and it is believed to have been imported with the former.

CATTLEYA TRIANÆ.

THIS handsome and popular Cattleya is now making a fine show, and a short account of it and its numerous varieties will therefore be specially appropriate at this season.

It is said to have been originally discovered by M. J. Linden, in 1842, near Fusagasuga, in the province of Cundinamarca, in New Granada, though it was not until many years afterwards that his collector, M. Braam, sent living plants to Europe. In 1855 plants were offered for sale for the first time, but it was not described until 1860. It was, however, the late Mr. Rucker, of Wandsworth, who first introduced the plant into cultivation. As long ago as 1848 a plant was sent to him by a correspondent in New Granada, which had been gathered in the valley of the Upper Magdalena River, which flowered in the following February. Dr. Lindley, to whom two flowers were sent, then gave it the name of C. quadricolor. Shortly afterwards it was mentioned in *Paxton's Flower Garden* (vol. i. p. 6), but unfortunately no description appeared until 1864, when it had been successively described as C. Trianæ and C. Rollissonii.

The species is spread over a large area in New Granada, between the second and fifth parallels of north latitude, and occurs on all three Cordilleras. It is very abundant in the Magdalena basin and certain other localities, and different collectors who have been in search of the plant speak of its great beauty when seen in immense masses in its native home. They also report the extreme variability of its flowers as regards their coloration, a statement fully confirmed by the numerous plants now cultivated in Europe.

It is this extreme variability that constitutes one of its greatest charms, and its habit of flowering during the winter months gives it great value as a garden plant. A multitude of forms have received distinctive varietal names, and were it desirable it would be possible to extend the number *ad infinitum*. Many of these forms, however, represent individuals rather than varieties in the true sense, though some of them present a constancy of character throughout a series of plants, which, however, in some cases probably arises from the subdivision of one original piece.

The typical form, or what may be considered as such, has the sepals and petals delicate rosy mauve, the side lobes of the lip somewhat similar, the front lobe bright purple-crimson, and the disc orange-yellow. The variety virginalis has pure white flowers, with the disc of the lip pale yellow, and much reduced in size. It is the purest white form known. The variety alba differs in having the disc of the usual size and a small rosy-lilac blotch in front of the same. This and the preceding variety are sometimes confounded together. Dodgsoni has also pure white sepals and petals, the front lobe of the lip magenta-purple bordered with lilac, the side lobes pale

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amethyst-purple, and the disc orange striated with yellow. The variet splendidissima has also white segments and a very richly coloured lip The variety delicata has the sepals and petals flushed with very pal amethyst and a slightly darker lip with a pale yellow disc. Osmani ha sepals and petals of a delicate rosy mauve, the front lobe of the lip of th richest crimson-purple, paler at the margin, and the disc bright yellow Russeliana is somewhat similar, but has a large portion of the side lobe deep crimson-purple. Backhousiana has an amethyst-purple stain near th tip of the petals, and the yellow disc of the lip reduced to a narrow band on either side of which is a white blotch. Schrœderiana has large lila flowers, with broad petals, and the front lobe of the lip deep purpl Leeana is the largest form yet introduced, and has the peculiarity that th crimson-purple of the front lobe of the lip extends into the throat, almos obliterating the characteristic yellow disc. Hooleana has smaller, bu somewhat similar, very richly coloured flowers. The variety striata i characterised by a broad irregular band running down the centre of th sepals and petals. Massangeana has the segments irregularly veined wit lilac-mauve, and the lip also veined, but of deeper colour. Finally, we ma note the variety chocoensis, the most fragrant form known, which has th peculiarity that its flowers are never fully expanded. Numerous othe variations might be enumerated, but the above are the principal and mos typical forms. Schroderæ, formerly regarded as a variety of C. Trianæ, i not here enumerated, being now generally considered different.

A list of the published figures of this handsome Cattleya will probabl be found useful for reference, and we here append it :—

Cattleya Trianæ, Linden & Rchb. f., in *Bot. Zeit.*, xviii. p. 74; *Rev Hort.*, 1860, pp. 405–407, fig. 85, 86; *Orch. Album*, i., t. 45; *The Garde* xxii. p. 70, t. 346; *Deutsche Gart. Zeit.*, 1886, p. 195, fig. 47, 48; *Orchid phile*, 1889, p. 209, with plate; *id.*, 1891, p. 81, with plate; *Le Jardin*, 189 p. 126, with plate.

C. quadricolor, Lindl. in *Gard. Chron.*, 1864, p. 269; *Bot. Mag.*, t. 5504 *Ill. Hort.*, xiv., t. 514.

C. labiata var. Trianæ, Duchartre in *Journ. Soc. d'Hort. Paris*, 1860, p 369, t. 13; *Veitch Man. Orch.*, ii. pp. 24–26, with fig.

Var. alba, *Lindenia*, i. p. 63, t. 29.

Var. Annæ, *Lindenia*, i. p. 67, t. 31.

Var. Colemanni, *Fl. Mag.*, n.s., 1875, t. 176.

Var. delicata, *Warn. Sel. Orch.*, i. t. 4, C. Rollissonii, T. Moore in *Fl. Mag.*, i. (1861), t. 8.

Var. Dodgsoni, *Fl. Mag.*, n.s., 1873, t. 64; *Orch. Album*, vi. t. 249.

Var. Ernesti, *Reichenbachia*, i. p. 99, t. 43.

Var. formosa, *Orch. Album*, iii. t. 108.

Var. Hooleana, *Orch. Album*, vi. t. 265.

Var. Madame R. Martin-Cahuzac, *Lindenia*, v. p. 79, t. 230.
Var. Massangeana, *Orch. Album*, vi. t. 242.
Var. Osmani, *Fl. Mag.*, n.s., 1879, t. 361; *Warn. Sel. Orch.*, iii. t. 29.
Var. pallida, *Lindenia*, v. p. 81, t. 231.
Var. purpurata, *Lindenia*, v. p. 77, t. 229.
Var. Russeliana, *Orch. Album*, v. t. 219.
Var. Schrœderiana, *Reichenbachia*, i. p. 105, t. 46.
Var. splendidissima, *Orch. Album*, iv. t. 150.
Var. striata, *Lindenia*, v. p. 83, t. 232.

THE HYBRIDIST.

Cypripedium × lutescens, Manda.

This is an interesting hybrid, raised in the establishment of Messrs. Pitcher and Manda, United States Nurseries, Short Hills, New Jersey, U.S.A., by crossing C. Spicerianum with the pollen of C. javanicum. It has now flowered for the first time. The dorsal sepal is yellowish green, with a few faint lines of a darker shade; the petals yellowish green, suffused with lilac near their tips, and spotted all over with small purple-brown spots; the lip rather long, green shaded with brown; and the staminode of a beautiful lilac shade. The leaves are tessellated with two shades of green.—*Garden and Forest*, December 14, 1892, p. 598.

Lycaste × schœnbrunnensis.

Lycaste is a genus in which few experiments seem to have been made by the hybridist, but a distinct and handsome cross flowered in October last in the Emperor of Austria's collection at Schönbrunn, near Vienna. Lycaste Skinneri was one parent, and probably L. Schilleriana the other. The sepals are oblong-lanceolate and acute, from $2\frac{1}{2}$ to $2\frac{3}{4}$ inches long, rose-pink, with a distinctly glaucous surface. The petals are yellowish white at the base, and suffused with light pink above, lanceolate-oblong, acute, and rather under two inches long. The three-lobed lip has a light yellow ground, the crest and side lobes densely spotted and freckled with light purple-crimson; the side lobes erect and rounded, the front one elliptical-ovate and obtuse, and the thickened callus linear, obtuse, and with rounded apex. The column is white, except at the base, which, together with its foot, is very deep purple-crimson. The flower reached us through Messrs. F. Sander and Co., of St. Albans.

PHALÆNOPSIS × INTERMEDIA, VAR. VESTA.

In the hybridisation of Orchids the unexpected frequently happens, and especially has it been so in the present case. The beautiful Phalænopsis × intermedia was long suspected to be a natural hybrid between P. Aphrodite and P. rosea, and this was at length proved by Mr. Seden, by artificial crossing. He afterwards fertilised P. rosea, var. leucaspis, with the pollen of P. Aphrodite, and the result is quite a distinct form of P. intermedia. P. rosea leucaspis differs from the type in having smaller flowers with shorter and broader segments, and the petals darker in colour than the sepals, and these characters are impressed on the hybrid, which differs from P. intermedia in much the same way. The flowers are smaller, the petals more distinctly rhomboidal, and the two teeth at the apex of the lip are straight, not curved inwards. The whole flower is of a lovely rose-purple, and as regards colour exceptionally distinct. This new acquisition was exhibited by Messrs. James Veitch and Sons at the meeting of the Royal Horticultural Society on January 17th last.

SELENIPEDIUM × PHÆDRA.

This is a new hybrid raised by Messrs. James Veitch and Sons, of Chelsea, and the first to flower, in which the stately S. Lindleyanum of Mount Roraima is connected by hybridisation with its congeners of the Andean Cordilleras. S. × Sedeni candidulum was the seed-parent, and therefore three distinct species are concerned in the parentage; and the resulting progeny is one of the handsomest hybrids in the genus. The leaves are nearly as broad as in S. Lindleyanum and shorter than in S. × Sedeni, and the flowers larger than in either parent. Dorsal sepal $1\frac{3}{4}$ inches long, oblong, obtuse, undulated at the margin, cream-white, mottled with light rose to two-thirds of its length; lower sepal very broad, nearly sub-orbicular, concave, yellowish white; petals broadly linear, deflexed and undulated, about three inches long, light rose-pink with a white median line; lip helmet-shaped, bright rose-pink, the unfolded lobes yellowish white with a few crimson dots. Staminode yellowish white, fringed with crimson hairs at the back. It is a decided acquisition. It was awarded a First-class Certificate by the Royal Horticultural Society on January 17th last.

CALENDAR OF OPERATIONS FOR FEBRUARY.

By W. H. White, Burford, Dorking.

During the month of February the temperatures mentioned in our preceding calendar should be maintained, allowing a slight rise with increasing sun heat. In ventilating the houses great care should be exercised to avoid draughts, as bright sunshine is often accompanied by very cold winds. A sharp look out must also be kept for insect pests, which must be kept in check by the application of the necessary remedies.

In the East Indian house plants of the beautiful winter-blooming Angræcum sesquipedale will be fast pushing from their stems a number of young fleshy roots; therefore if any plant requires more root room it must be attended to at once. If any have lost their lower leaves, leaving the stem bare, they may be cut down, and repotted, as last month advised for Aërides: using as small pots as possible. This Angræcums is a heat and moisture-loving species, so that the East Indian house is the proper place for it. Place the plants in a shady position, and during the spring and summer months give abundance of water at the roots, after which the quantity should be gradually reduced, but not entirely withheld, as the roots do not appreciate dryness. Avoid keeping the plants in a saturated condition, or spot will assuredly make its appearance, but when the plants require water give them a thorough soaking. The foliage of Angræcums must be carefully sponged occasionally, as small yellow thrips are very partial to the young leaves. Every effort should be made to eradicate these pests. A little Scotch snuff or tobacco powder puffed down into the centre of the plant will drive them from their hiding-places, after which several slight fumigations may be given on alternate evenings, to complete their destruction.

The elegant spring-flowering Platyclinis glumacea will by this time have made considerable progress with its young growths. The coolest end of this house is the most suitable place for it, and the plants should be stood on inverted pots, to bring them as near the light as possible, until the flowers commence to open, when they may be lowered, and placed in a prominent position, in order to show to perfection the exquisite beauty of this lovely Orchid. As the plants are now growing freely, and making a quantity of young roots from the flowering growths, they must receive frequent waterings. Immediately the flowering period is over, the plants should be repotted, using equal parts of peat and chopped sphagnum, to which add a moderate quantity of broken crocks. Any plants that have become bare may be broken up and put together again, as advised for Miltonias on a succeeding page. The species of Platyclinis are very subject to red spider; it is therefore necessary to keep the under parts of the leaves well syringed during the hot days of summer. When growth is completed, the

plants may be rested in the Cattleya house, and less water will be required at the roots.

Another Orchid now starting into growth is Dendrobium chrysanthum, which delights in hot, moist treatment. This plant succeeds well when grown in a teak basket, hanging close to the roof glass. If any of the plants require re-basketing, or top-dressing, it should now be attended to, allowing plenty of drainage, and about an inch of sphagnum moss only, to root into. Water must be very sparingly used until the young roots have a firm hold, or the new growths will probably damp off. But when the plant is in full growth liberal supplies may be given and continued until the flowers fade. The plant will then be at rest, and water should be entirely withheld. This variety should be kept in the East Indian house the whole year round.

In the Cattleya or Intermediate house Cattleya gigas and C. Warneri will be starting into growth, and should be placed at the warmest end of the house, close to the roof glass; as it is very important to give them all the light possible at this season, in order to bloom them successfully. If the sun be bright and powerful while the plants are making their growths, they must be shaded with some thin material, to prevent the young leaves from being scorched and becoming unsightly. At first very little water should be given, but as the stems lengthen the amount may be gradually increased. Avoid keeping the plants in a saturated condition; an occasional drying of the compost will keep it from getting sour, and thus prevent the old roots from decaying. When sufficiently dry give the plants a thorough soaking, and as the growths mature gradually reduce the amount of water until only enough is given to prevent shrivelling.

Cattleya Dowiana and its variety aurea will also be growing. It requires a few degrees more heat than C. gigas: otherwise the above directions will suit it admirably.

It is now the best time of year to examine some of the Miltonias, as M. spectabilis, and its variety, Moreliana, M. stellata, M. Bluntii, and others, and to give more root room to those that require it. Any of the plants that have grown bare in the centre may be broken up, cutting away all useless bulbs and dead roots. In repotting them, use shallow pans, well drained with small pieces of broken bricks and crocks. Keep the plants well elevated above the rim of the pot. Miltonias do not seem to appreciate peat, for as soon as the young roots touch it they rot off. Sphagnum moss mixed with broken pieces of crock suits them much better. After repotting, peg down with copper wire any pieces that be loose, as they will never succeed if not firmly fixed. They should always be kept moderately moist, but more water may be given when the flower-spikes appear. Place the plants in the coolest and shadiest part of the Cattleya house.

In this structure also Miltonia vexillaria and M. Schroederiana grow

well when properly attended to. They will now be in full growth and require abundance of water at the root. If any plants of M. vexillaria show the least sign of becoming sickly, the young growths soft and weak, or the leaves spotted at their tips, it plainly shows the result of too much heat and moisture, and the plants must be removed to cooler quarters without delay. Give abundance of fresh air whenever possible. During the late severe weather, the thermometer registering 28° of frost, we kept the bottom ventilator directly under them slightly open, both by day and night, without the slightest injury to the plants, the inside temperature being 53° F. Thrips are particularly fond of this species, and very quickly disfigure the foliage. The plants should be dipped into some safe insecticide at least once a fortnight. This, of course, must be done with discretion. Before dipping, the plants should be allowed to become moderately dry, so that when the operation is finished they may receive a thorough watering, to disperse any of the mixture that may have settled on the surface of the compost. I always make it a practice after dipping each plant to immerse it into clean, tepid soft water; taking great care to shade the plants from the least sunshine for a day or two.

As the plants of Cypripedium villosum, C. Boxallii, C × Leeanum, C. insigne and its varieties, pass out of flower, they should be examined to see if repotting is necessary. Pot-bound plants should be given a liberal shift, into pots at least two sizes larger. Drainage to about one-third the depth of the pot will be sufficient, so that the water will pass away as through a sieve. These species always require to be kept moist. They will root and grow freely in equal parts of lumpy peat and chopped moss; pieces of crock about an inch square may be mixed in with it, which keeps the soil porous, and prevents it becoming sour. In repotting, do not elevate these plants above the rim of the pot, but keep the compost just below it. Other Cypripediums as C. Spicerianum, C. Druryi, and C. × Winnianum, succeed much better when elevated above the rim. They also may be repotted as they pass out of flower.

One of the most delightful of all Orchids when in bloom is Vanda cœrulea. It is generally considered difficult to preserve in a healthy, flourishing condition for many years together. The first two or three seasons after importation, the plants grow and bloom fairly well, but after that period they usually become weaker, and slowly dwindle away altogether. We have yet much to learn respecting their successful cultivation. The best plan I know is to put them into teak baskets or tall cylinders, with crocks and sphagnum moss to root in, keeping the bottom leaves as near the moss as possible. During the winter months great care must be taken not to overwater the plants, or the foliage will quickly become spotted. Moderate supplies every ten or twelve days will suffice, but during hot weather water should be freely given. This species delights in abundance

of fresh air always, therefore suspend the plants close to the roof ventilators in the Cattleya house during the growing season; when at rest the Mexican house will suit them better.

In the Mexican house Odontoglossum citrosmum will now be completely at rest. It is a plant well worthy of cultivation in every collection, being of easy culture, and when in bloom makes a very effective display, with its long pendulous spikes hanging from the roof. Not a drop of water should be given until the young growths are about an inch long, and the flower spikes make their appearance. The plants should then receive abundance of water, both at the roots and in the atmosphere. On bright, sunny afternoons, syringing the plants overhead will be very beneficial to them. Immediately the young flower-spikes are seen making their way up, a piece of wadding should be wrapped round them, to protect them from woodlice and slugs which are very partial to them. This will effectually keep off these destructive pests. A good way to trap woodlice is to cut a potato in half, hollowing the pieces in the centre, then lay them on the compost, and examine both night and morning.

In the Cool house attention must be paid to watering and ventilation and the keeping of insect pests in check, as previously recommended. Many of the Odontoglossums will be pushing up their spikes, which should be protected by a piece of wadding at the base.

Odontoglossum coronarium and O. miniatum are both strong-growing species, which will succeed at the coolest end of this house. Their roots do not thrive well in peat; sphagnum moss well mixed with crocks suits them much better. I have noticed that when grown in peat and moss the roots have a blackish appearance, and soon decay, whereas in moss and crocks they are white and fresh, lasting in good condition much longer. O. coronarium, being a scandant grower, should be placed in long narrow teak baskets.

The cooler species of Masdevallia, as M. Harryana, M. ignea, and the M. caudata group, will require very careful watering during severe and dull weather, keeping the plants comparatively dry, both at the roots and in the atmosphere. If the house in which they are grown be naturally moist, little or no damping down will be necessary.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

Two Orchids are figured in the January number of this work :—

EPIDENDRUM SPONDIADUM, Rchb. f., a species discovered many years ago by Warscewicz, in Costa Rica, where it grows upon the Spondias tree, and now re-discovered in Jamaica, where it is said to be rare, and apparently confined to elevations of about four thousand feet on the Blue Mountains. It is allied to E. variegatum, Hook., and has light green flowers, with a large dull purple disc to each segment. It flowered at Kew ; t. 7273.

CYPRIPEDIUM FASCICULATUM, Kellogg, VAR. PUSILLUM, Hook. f. This is the C. pusillum, Rolfe in *Kew Bulletin*, 1892, p. 211, reported to be a native of Florida, but now referred as a variety of the Californian C. fasciculatum, Kellogg, notwithstanding its numerous differences. It is a small species, about four to five inches high, with two leaves, and three to five light yellowish-green flowers striped with purple-brown. The species flowered at Kew in May, 1892, also with H. J. Elwes, Esq., of Colesborne Park, Cheltenham, and with Messrs. Sander & Co., of St. Albans. In a note on the section Diphyllæ C. guttatum is omitted, and C. Henryi wrongly included ; t. 7275.

JOURNAL OF HORTICULTURE.

CATTLEYA LABIATA ALBA, an excellent woodcut of a single flower of this chaste and beautiful Cattleya ; January 12th, p. 23, fig. 4.

LINDENIA.

The January number contains :—

CATTLEYA ALEXANDRÆ, L. Lind. and Rolfe, VAR. TENEBROSA, Rolfe, a handsome variety with dark purple-brown segments ; t. 357.

CATTLEYA ALEXANDRÆ, L. Lind. and Rolfe, VAR. ELEGANS, Rolfe, a very distinct and beautiful variety with rosy segments, and the side lobes of the lip enlarged, reflexed, and deep rose-colour at the tip. The history and affinities of this remarkable Cattleya are here given ; t. 358.

ODONTOGLOSSUM INSLEAYI, Lindl., VAR. IMSCHOOTIANUM, a handsome yellow variety in which most of the dark markings have vanished, except round the margin of the lip ; t. 359.

CYPRIPEDIUM × LEONÆ, L. Lind, a large and handsome hybrid derived from C. insigne Chantini fertilised with the pollen of C. callosum, and much like an improved form of C. × Ashburtoniæ. It is dedicated to Mrs. Leon, wife of H. S. Leon, Esq., M.P., of Bletchley Park ; t. 360.

ORCHID ALBUM.

The last part of this work contains:—

LISSOCHILUS GIGANTEUS, Welw., a remarkable and handsome species from the Congo, introduced to cultivation by Messrs. Linden of Brussels and flowered for the first time in Europe in the collection of Sir Trevor Lawrence, at Burford, Dorking, in 1888. It grows in marshy places by the river banks in masses, flowering in profusion, its scapes sometimes attaining a height of sixteen feet; t. 457.

DENDROBIUM CRASSINODE, Rchb. f., VAR. ALBUM, a rare and chaste variety, its flowers white with a yellow disc; t. 458.

CŒLOGYNE LACTEA, Rchb. f., a pretty Burmese species introduced by Messrs. B. S. Williams & Son, about ten years ago. It has cream-white flowers with some yellow and brown markings on the lip; t. 459.

ODONTOGLOSSUM TRIUMPHANS, Rchb. f., VAR. AUREUM, a handsome deep yellow variety, in which the chestnut-brown markings have vanished, and thus analogous to O. luteopurpureum Vuylstekeanum. It flowered in the collection of A. H. Smee, Esq., of The Grange, Carshalton; t. 460.

REICHENBACHIA.

The last issued part of this work commences Volume II. of the second series. It contains the following:—

CATTLEYA LABIATA, Lindl. The history of the re-introduction of this handsome autumn flowering Cattleya, which has been the subject of so much controversy, is here given. It is remarkable that its Pernambuco habitat should have remained so long undiscovered; p. 1, t. 49.

DENDROBIUM × VENUS, Rolfe, a very handsome hybrid from D. Falconeri ♀ and D. nobile ♂, raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne; p. 5, t. 50, fig. 1.

DENDROBIUM × CASSIOPE, Rolfe, a charming little hybrid raised from D. moniliforme (D. japonicum) ♀ and D. nobile albiflorum ♂, in the same collection as the last named; p. 5, t. 50, fig. 2.

SELENIPEDIUM × SEDENI, Rchb., f., VAR. WEIDLICHIANUM, Hort., a handsome and floriferous variety raised in the same collection as the two preceding; p. 7, t. 51.

CATTLEYA LABIATA MOSSIÆ REINECKIANA, Rchb. f., a handsome variety with pure white flowers and the disc of the lip beautifully veined with crimson; p. 9, t. 52.

REVUE DE L'HORTICULTURE BELGE ET ETRANGÉRE.

The January number contains a coloured plate of the following:—

CYPRIPEDIUM × ALBERTIANUM, Hye, a handsome hybrid raised in the collection of M. Jules Hye, of Gand, from C. Spicerianum fertilised with the

pollen of C. insigne Wallacei. It was awarded a gold medal by the Société Royale d'Agriculture et de botanique of Gand, in November last. It is in reality a large and brightly coloured variety of C. × Leeanum; p. 3, with plate.

CYNORCHIS GRANDIFLORA.

Less than a year ago Messrs. W. L. Lewis and Co., of Southgate, were fortunate enough to flower the interesting Disa incarnata, Lindl., a Madagascar species described upwards of half a century before. And now another remarkable plant from the same country has also flowered with them, probably for the first time in Europe. It is Cynorchis grandiflora, Ridley, the largest-flowered representative of a genus closely allied to Habenaria. It grows from eight inches to a foot high, and bears two or three narrow leaves at its base. The scape is one- or two-flowered, and, together with the bracts and sepals, bears a number of large oblong purple-brown blotches. The sepals and petals are narrow and connivent, about an inch long, pale green, and greatly exceeded by the large four-lobed lip. The spur is about an inch and three-quarters long, the apical half somewhat swollen and filled with nectar. The lip is very light purple, but both white and purple varieties have been described. It grows on damp rocks on the highlands of Central Madagascar, at about 4,000 to 5,000 feet elevation. It was exhibited at the meeting of the Royal Horticultural Society on January 17th last, and was awarded a Botanical Certificate.

Cynorchis grandiflora, Ridley in *Journ. Linn. Soc.*, xx. p. 332.

CYPRIPEDIUM × POLYSTIGMATICUM.

This hybrid has been raised on at least three different occasions, the parents being C. venustum and C. Spicerianum. First it appeared in the collection of R. H. Measures, Esq., The Woodlands, Streatham; then with D. O. Drewett, Esq., of Riding, Mill-on-Tyne; and now in the collection of W. Vanner, Esq., Cambden Wood, Chislehurst. In the two latter cases, and probably in the former one also, C. Spicerianum was the pollen parent. It possesses an unmistakable combination of characters of the two parent species. The dorsal sepal is veined with green and broadly bordered with white; the petals yellowish-green at the base with numerous small dusky brown spots and a darker mid-line, the upper part reddish-brown, the lip less distinctly veined than in C. venustum, and the staminode tinged with light purple and reticulated in the centre with green. It varies a little; those forms in which the characters of C. Spicerianum are conspicuous, being the most attractive.

Cypripedium × polystigmaticum, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 407.
C. × venusto-Spicerianum, O'Brien in *Gard. Chron.*, 1889, i. p. 394.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By John Weathers.

Notwithstanding a wretchedly wet and snowy day, there was a good display of Orchids at the last Floral Meeting of the Society, held on January 17th, in the Drill Hall, James Street, Westminster.

A magnificent specimen of Cycnoches pentadactylon, with about 250 flowers, borne on ten drooping racemes, was exhibited by W. W. Mann, Esq., of Ravenswood, Bexley (gr. Mr. J. Simmon), and received a First-class Certificate, as a mark of the high esteem in which the Orchid Committee regarded it. It may be mentioned that one pseudobulb bore five spikes, another three, and another two. The sepals and petals are semi-transparent, with blotches of deep purple brown, the column long, slender, and arching, like a swan's neck, and the small lip reduced to five narrow lobes.

C. Ingram, Esq., Elstead, Godalming (gr. Mr. T. W. Bond), exhibited a variety of Cypripedium Lindleyanum, called superbum, with pale rose flowers.

Reginald Young, Esq., Linnet Lane, Liverpool, sent some deeply coloured flowers of Lælia anceps plumosa, noticeable for the featheriness of the colour in the front of the lip.

From the Botancial Gardens, Glasnevin, Dublin, Mr. F. W. Moore, the curator, sent two spikes of the remarkable Bulbophyllum comosum, a native of Eastern Burma, which received a Botanical Certificate. The sepals are nearly white, and fringed with short hairs.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, exhibited Cynorchis grandiflora, a Madagascar Orchid new to cultivation, which obtained a Botanical Certificate. The upper sepal and petals are pale green blotched with red; the lip is divided into four lobes, and is of a soft purple-pink, while from the base descends a spur about two inches long. Spikes of the orange-red Disa incarata, which received a Botanical Certificate in March, 1892, were also exhibited by this firm.

Messrs. Hugh Low and Co., Clapton, staged a small group, the predominating feature being several plants in bloom of the pretty Saccolabium bellinum, which received a First-class Certificate in 1885.

Among the group of plants exhibited by Messrs. F. Sander and Co., St. Albans, were the dusky flowered Pleurothallis ornatus, with dark purple spots on the surface, and oscillating white hairs on the margins of the segments. A large flowered form of the brown and yellow Bulbophyllum (Sarcopodium) Godseffianum (certificated in 1890); the orange-flowered

Masdevallia × Kimballiana (M. Veitchii ♀ × M. Shuttleworthii ♂); M. × Hincksiana, and a few good Cypripediums, were also shown.

Messrs. J. Veitch and Sons, Chelsea, exhibited a group which was remarkable for the many novelties it contained. Cypripedium × Penelaus (C. × calurum ♀ × C. caudatum Lindeni ♂) received a First-class Certificate. This hybrid, like C. × macrochilum, which was also exhibited, is peculiar in having the pouchless form of C. caudatum as one of its parents. Two flowers were borne on the same scape, but were quite distinct from each other, the upper one being smaller, with shorter tails and to a great extent devoid of the deep purple colouring which was present in the lower bloom. The difference in age would probably account for this. Cypripedium × Phædra (C. × Sedeni candidulum ♀ × C. Lindleyanum ♂), a hybrid with cream and rose flowers also received a First-class Certificate. C. × Germinyanum (C. villosum ♀ × C. hirsutissimum ♂), which received a First-class Certificate in February, 1890, was inadvertently given an Award of Merit on this occasion. Other noteworthy Cypripediums in this group were C. × Godseffianum (C. Boxalli ♀ × C. hirsutissimum ♂); C. × Lathamianum (C. Spicerianum ♀ × C. × villosum ♂), C. × Creon (C. × Harrisianum superbum ♀ × C. × œnanthum superbum ♂); C. × Æson (C. insigne ♀ × C. Druryi ♂), a form but slightly removed from C. insigne; and C. × Orion, a distinct cross between C. insigne ♀ and C. concolor ♂, having a large whitish upper sepal, washed with pale yellow and lined with purple spots, the petals and lip creamy yellow with washes and spots of purple. The chief attraction, however, in the group was a fine strong plant of Calanthe × gigas (C. vestita gigantea ♀ × C. × Sanderiana gigantea ♂) which received a First-class Certificate. The scape was about $3\frac{1}{2}$ feet high, and had fourteen large flowers, fully expanded, the sepals and petals cream-colour, and the lip deep rose, while about a dozen others were in bud. Zygocolax × Veitchii (Zygopetalum crinitum ♀ × Colax jugosus ♂), which had already been certificated in 1887, was shown, the blooms being somewhat similar to those of Z. × leopardinus, except that the lip had violet lines running over the surface. Phalænopis × Vesta (P. Aphrodite ♀ × C. rosea leucaspis ♂) with rose-speckled flowers, and the hybrid Epidendrum × Endresio-Wallisii were also included.

Messrs. B. S. Williams and Son, Upper Holloway, N., were awarded a Silver Banksian medal for a group in which Cypripediums, Lælia anceps Stella, Cattleya Percivaliana, Miltonia Roezlii, and Odontoglossum × elegans (a natural hybrid between O. cirrhosum and O. Hallii) were chiefly conspicuous.

The next meeting of the Society will be held on February 14th. A complete list of plants, flowers, fruits, vegetables, &c., certificated by the Society from 1859 to the end of December, 1892, has just been issued. The Orchids have received special attention, and the parentage of all hybrids has been inserted in the list, for convenience of reference.

CONTINENTAL NOTES.

By Ch. de Bosschere.

Owing to the excessive cold the monthly meetings of the Chambre syndicale des horticulteurs belges, and the Société Royale d'Agriculture et de Botanique of Gand, and of the Orchidéene, of Brussels, all had to be abandoned. A considerable number of showy Orchids, however, are in flower in the collections of the various amateur and professional growers.

Several important collections are situated at Ghent. That of M. Alfred Van Imschoot is one of the most representative. This gentleman is not content to limit himself to the species and varieties commonly grown, but has a large number of botanical curiosities in addition. Many interesting species are now in flower. In the cool house we may note—a beautiful variety of Odontoglossum ramosissimum; O. × Jenningsianum parcigutta-tum; a richly coloured form of Oncidium cucullatum Phalænopsis; a well-bloomed plant of Amblostoma tridactylum; the bright rose Masdevallia Barlæana, and its offspring with M. Veitchiana, the elegant M. × Parla-toreana. In the warm house the number of flowering species is greater, and includes—Oncidium splendidum, a fine panicle of about 35 flowers: Brassia Lawrenceana longissima, one of the most beautiful of the genus: Zygopetalum brachypetalum, and the elegant *Z.* graminifolium; the rare Phalænopsis Micholitzii, with its charming cream-coloured flowers: and many commoner things.

In the collection of M. Jules Hye-Leyssen, noted for its excellent culture, Odontoglossum amabile, O. Chestertoni, and O. guttatum splendi-dum are in flower; also a second example of the beautiful Cypripedium × Albertianum, and a fine plant of C. × Charles Canham, with seven immense flowers, certainly of the finest hybrids yet raised.

In the establishment of M. Edward Pynaert Van Geert the beautiful Cypripedium Chamberlainianum is in flower, and a handsome variety of C. × Charles Canham with flowers striped like those of C. × Dauthieri marmoratum.

M. Charles Vuylsteke, of Loochristy, has a valuable collection containing many beautiful and rare varieties of Odontoglossum; also many hybrid Cypripediums. Four interesting novelties flowered for the first time in December last, of which further particulars must be deferred for the present.

In the Brussels collections are several things worthy of mention. In the State Botanic Garden, under the care of M. L. Lubbers, we observed the two rare Maxillarias, longissima and pentura, described long ago by Dr. Lindley, also a new and interesting hybrid Cypripedium.

In the establishment of M. A. A. Peeters we noted—a pure white form of Lælia albida; Cypripedium × Sallieri Hyeanum with ten flowers; C. × Charles Canham; C. × Ashburtoniæ expansum; and a good plant of Odontoglossum aspersum with ten flowers.

At the Horticulture Internationale more than 120 species and varieties are in flower, including the new Cattleya Alexandræ and its varieties tenebrosa and elegans; the remarkable Mormodes Rolfeanum, also M. buccinator varieties aurantiacum and citrinum; Cirrhopetalums Mastersianum and Amesianum: the new Oncidium cristatum; a fine plant covered with its graceful racemes of Platyclinis glumacea; Vanda tricolor planilabris; numerous beautiful forms of Odontoglossum, Dendrobium, and Cypripedium, including some new hybrids of the latter; and a variety of other things.

CATTLEYA IRICOLOR.

The origin of this very rare but distinct Cattleya still remains a mystery. It was described upwards of eighteen years ago by Professor Reichenbach (*Gardeners' Chronicle*, 1874, ii. p. 162), on the occasion of its flowering with Messrs. Veitch, of Chelsea. The only known plant was acquired at one of the Orchid sales at Stevens' Rooms, where it was sold without a specific name and without any note of its origin. It afterwards passed into the collection of Baron Schröder, of The Dell, near Windsor, where it flowered last summer. It is a smaller plant than most Cattleyas of the labiata group, being under a foot high. The raceme bore three flowers, with cream-white sepals and petals just over two inches long, and a cream-white lip with a W-shaped yellow marking across the middle, on either side of which are several maroon-purple stripes running across the lip in a transverse band. The anther case is very singular in shape, being flat on the top and much broader at this point than elsewhere. Though much larger than C. luteola, it is evidently allied to it on the one hand, and to C. Rex on the other. It has been used for hybridisation purposes, as C. × Philo and C. × Philo albiflora were both partly derived from it, the parentage being C. Mossiæ ♀ × C. iricolor ♂. Some day the habitat of this very distinct Cattleya may be discovered.

THE GAND INTERNATIONAL EXHIBITION.

We have received the programme of the Thirteenth International Exhibition of the Société Royale d'Agriculture et de Botanique de Gand, to be held from April 16th to 23rd next. Classes 18 to 91 are set apart for Orchids, and numerous Gold and Silver Medals are offered for collections of cut flowers, for single specimens of all the important garden genera, including novelties, both species and hybrids, and for numerous collections of various kinds, as Cattleya and Lælia, Cypripedium and Selenipedium, Masdevallia, Dendrobium, Odontoglossum, Vanda and its allies, and others. Classes are set apart for amateurs and nurserymen. Entries close on March 20th, and full particulars may be obtained from the Secretary, M. E. Fierens, Gand.

Replies to Correspondents.

C. de B.—Many thanks.

W. L., Hapton.—Phaiocalanthe × Sedeniana rosea, a handsome variety; next month.

J. W., Ryde.—Your suggestion is a good one, and, as you will see, is being acted upon.

F. F., Argenteuil.—The two flowers have not yet reached us.

W. H. P.—The capital T in Schomburgkia Tibicinis is not incorrect, though not always thus written. It means, literally, The Trumpeter's Schomburgkia, in reference to the fact that in Honduras the hollow pseudobulbs are used by native children as horns. The initial capital is generally used in substantive names.

W. W. M.—Many thanks for portrait; next month.

Errata.

P. 7, line 8 from bottom, for "Howard" read "Holbrook."

P. 14, line 8.—It has been pointed out to us that Mr. White did not immediately succeed the late J. C. Spyers in charge of the Burford collection, the interval being filled by Messrs. Baxter and Bickerstaff, successively.

P. 19, line 7, for "Fœrstermanii" read "Fœrstermanni."

P. 19, line 9, "Angæcum" read "Angræcum."

P. 21, line 10 from bottom, for "Islington" read "Ilsington."

P. 30, line 15 from bottom, for "W. Wells" read "M. Wells."

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VOL. I.] MARCH, 1893. [No. 3.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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THE ORCHID REVIEW.

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NOTES.

THE Royal Horticultural Society will hold two meetings during the present month, on the 14th and 28th respectively, when the Orchid Committee will meet at twelve o'clock, noon, to adjudicate upon the various Orchids exhibited.

The January number of the *Kew Bulletin* (issued early in February) contains a fourth decade of New Orchids, which are more particularly noticed on another page of our present issue.

Several Orchid Sales are announced. The duplicate specimens of the celebrated Pickering Lodge Collection, Timperley, near Manchester, are to be disposed of on the premises, by Messrs. Protheroe and Morris, on March 8th and 9th. On the 11th the second portion of the Fernside Collection is to be sold at the Central Sale Rooms of the same firm. And on April 11th and following days the Quorn House Collection, near Loughborough, will come under the hammer.

The plant of the beautiful Cymbidium grandiflorum for which Messrs. F. Ross and Co., of Merstham, received a First-class Certificate from the Royal Horticultural Society on February 14th was three days later offered for sale at Messrs. Protheroe and Morris' Rooms, and after a spirited competition was secured by Messrs. James Veitch and Sons for the sum of fifty-four guineas.

A magnificent specimen of Odontoglossum Edwardii is now flowering in the collection of D. Tod, Esq., Eastwood Park, near Glasgow. It bears six branching spikes and 1,180 of its beautiful violet-purple flowers. The bulbs are eight inches high by half as broad, and one of them carries three spikes.

The nomenclature question is again to the front. Quite recently we were gravely informed that all our Dendrobiums must be called Callista, our Angræcums Angorchis, and our Calanthes Alismorchis; not to mention a number of other equally trifling changes. And now comes a suggestion from a new and unexpected quarter. Generic hybrids furnish the theme.

Dean Herbert held the view that generic hybrids were impossible, their so-called occurrence being presumptive evidence that botanists had been mistaken with regard to the genera in question. This view is held up to admiration by Mr. W. Watson, in a recent number of *Garden and Forest.*

"No one," he writes, "acquainted with Lælias and Cattleyas would object to their being united to form one genus, and Sophronitis might, with equal reason, be included with them. . . . Phaius and Calanthe are very near allies, if we compare such species as Phaius veratrifolius with Calanthe Masuca, etc., the botanist's opinion notwithstanding."

"It would simplify matters," he proceeds, "if botanists would look upon the crossing of two plants as conclusive proof of their generic relationship. . . . The whole system of classification is admittedly arbitrary, and the division of plants into genera is often only a temporary arrangement, to be reconsidered when more is known."

Information, however, is coming to hand. Lælia has been crossed with Cattleya, Cattleya with Sophronitis, and Sophronitis with Epidendrum. We have also natural hybrids connecting Cattleya with Brassavola and Epidendrum, and an artificial one connecting Epidendrum with Lælia, and therefore these must all be united to form a single genus.

We are not told which name to adopt, nor yet how we are to distinguish this vast and polymorphous genus from Schomburgkia, Broughtonia, Tetramicra, and other allies, which have not been connected by hybridisation; or whether these also must be included. But this is a mere detail, and will doubtless be explained in a future paper.

The case with regard to Phaius and Calanthe is particularly unfortunate. Botanists have been rash enough to place the two in different groups, and to suggest that they are more closely allied to certain other genera than they are to each other. Certainly they possess well-marked structural differences. But we now learn that all this is as nothing compared with the weighty fact that the two have been successfully hybridised together.

By the way, a Phaius known in cultivation might have been selected as an illustration, especially as P. grandifolius is identical in structure with P. veratrifolius, and is, moreover, the particular species which called forth

the remarks. As it is, there is just the danger that P. veratrifolius may be confounded with the Calanthe of the same name.

The worst of it all is that genera may no longer be based on well-marked structural similarities and differences, but must be taken, red-hot, as it were, from the hands of the hybridist. We are evidently on the eve of some startling developments, and we believe hybridists have the "re-vision"—we suppose this will now be the correct word—of two or three other genera in progress.

Why draw the line at genera? It might simplify matters still further if species were included. We might then show that nearly all the tropical Cypripediums were varieties of one variable and widely diffused species, which would save a lot of trouble. We merely offer the suggestion.

THE HISTORY OF ORCHID HYBRIDISATION.

PART III.

(*Continued from page* 40.)

OUR last paper brought us down to the end of 1876, during which year considerable progress was made. In 1877 less than half as many novelties appeared. The first, however, was the work of a new operator.

Zygopetalum × Clayi was raised in the collection of Colonel Clay, of The Slopes, Wallassy, Birkenhead. Its parents were *Z.* crinitum and *Z.* maxillare, the latter, I believe, being the pollen parent. It made its *début* in the Manchester Botanical and Horticultural Society on April 27, 1877, and was awarded a First-class Certificate. Soon afterwards it was described by Reichenbach.

Selenipedium × albopurpureum, which next appeared, was the first secondary hybrid in the genus. It was obtained by Mr. Seden, by crossing S. Schlimii with the pollen of S. × Dominyanum. It was described as a great curiosity, the father parent being itself a mule, which had flowered for the first time about seven years before. It is a very beautiful thing, showing a curious combination of the characters of the three parent species; S. Schlimii, however, obtaining a preponderating influence in the matter of colour, as is usually the case.

Lælia × Sedeni, obtained by crossing Cattleya superba with the pollen of Lælia × devoniensis, flowered for the first time during 1877. It is said to combine the free growth of the pollen parent with the brilliancy of colour and fragrance of the seed-bearer. A single plant only was raised, which is now in the collection of Baron Sir Henry Schröder, at The Dell, Egham.

Cypripedium × patens was next described by Reichenbach. It was not a new cross, however, its parents being C. Hookeræ ♀ and C. barbatum ♂, and thus identical with those of C. × marmorophyllum, of which it is clearly a variety, if not a mere synonym. It is not improbable that both came from the same seed-pod, as they flowered within about a year of each other in the Royal Exotic Nursery.

The last hybrid of the year was Cypripedium × lucidum, obtained by Mr. Seden by crossing C. Lowii with the pollen of C. villosum. It combines well the characters of the two parent species.

During 1878 only four novelties appeared, from which it would appear that experiments in hybridisation had for some reason received a temporary check.

Calanthe × Sedeni appeared very early in the year, having been obtained some time previously by Mr. Seden, by crossing C. × Veitchii with the pollen of C. vestita rubro-oculata. This furnished the second example of a hybrid being successfully used as the seed-parent. Mr. Seden, as may readily be inferred, was the raiser. Considering how popular C. × Veitchii had become, and the high estimation in which it was held as a winter-flowering Orchid, it is not a little curious that a period of eighteen years should have elapsed before a second member was added to the group. This plant established another record, as the first hybrid which had been crossed with one of its original parents.

The next hybrid was a Selenipedium, though described as Cypripedium × porphyreum. It was obtained by Mr. Seden from Selenipedium Roezlii crossed with the pollen of S. Schlimii. As the seed-parent is scarcely more than a geographical variety of S. longifolium, we may rank the present hybrid as a variety of the well-known S. × Sedeni, chiefly differing in its somewhat darker colour.

Cypripedium × nitens next appeared, having been raised by Mr. Seden, by crossing C. villosum with the pollen of C. insigne Maulei. The characteristics of the seed-parent preponderate considerably in this hybrid.

Another Cattleya was now added to the list. Cattleya × Marstersoniæ was obtained by crossing C. Loddigesii with the pollen of the old autumn-flowering C. labiata. Reichenbach originally stated that one parent was "another seedling in the way of C. Loddigesii," but the statement has since been corrected. It was named Mrs. Seden, *née* Marsterson.

Seven hybrids were described during 1879, all of them belonging to genera already mentioned, and with one exception the results of Mr. Seden's energy. One, however, was not a new cross.

The first was described as Cattleya × Mardelli. Its parentage was not originally stated, but it has since been given as Cattleya Lueddemanniana ♀ and Lælia elegans ♂. It is a handsome hybrid. It was named after an uncle of Mr. Seden.

Dendrobrium × splendidissimum, which next appeared, is one of the handsomest hybrid Dendrobiums yet raised. It was obtained in the Royal Exotic Nursery, by crossing D. aureum with the pollen of D. nobile. Thus it has the same parentage as D. × Ainsworthii, of which it may be considered as a very fine variety, with all the segments tipped with rosy mauve instead of being pure white. It probably owes its character to the finest forms of each species having been selected for parents. It was at first thought that D. superbum instead of D. nobile might have been one parent, but the idea has since been given up.

Another Dendrobium immediately followed, and was described as D. × micans. It was derived from D. Wardianum (the old Assam form) ♀ and D. lituiflorum, two species not hitherto used for hybridisation purposes. A single flower was produced in February, 1879, when the plant was only three years old. Mr. Seden was the raiser.

Cypripedium × vernixium was the first hybrid from C. Argus, the pollen having been derived from C. villosum. It presents a combination of the characters of the parent species, but those of the pollen parent preponderate. It was raised by Mr. Seden.

Selenipedium × Ainsworthii, another secondary hybrid, was raised by Mr. Mitchell, gardener to Dr. Ainsworth, Cliff Point, Broughton, Manchester, from S. Roezlii crossed with the pollen of S. × Sedeni. Like most of its allies, it is a vigorous and floriferous hybrid.

Lælia × Philbrickiana was next described. It was the first hybrid from Cattleya Aclandiæ, the pollen being derived from Lælia × elegans. It is a handsome hybrid. It was raised by Mr. Seden, and was dedicated to F. A. Philbrick, Esq., Q.C., of Oldfield, Bickley.

Cypripedium × porphyrospilum, described by Reichenbach, was the last hybrid of the year. It was not a distinct cross, however, as it came from the same seed capsule as C. × pycnopterum, of which it can at most be considered as a variety. C. venustum ♀ and C. Lowii ♂ were the parents.

In 1880 another genus was added to the list, when the handsome Masdevallia × Chelsoni flowered for the first time. It was the first seedling Masdevallia raised in Europe, and was obtained by Mr. Seden, by crossing M. amabilis with the pollen of M. Veitchiana. The flowers exhibit a charming combination of orange and crimson, and, being studded with the iridescent violet hairs of the pollen parent, the colour varies according to the direction from which the light falls.

Chysis × Sedeni, the second hybrid in the genus, which flowered immediately afterwards, was also raised in Messrs. Veitch's establishment. Its parents were C. Limminghii and C. bractescens, the latter being the pollen parent. It is said to have the habit of the mother plant, with flowers more nearly resembling those of C. bractescens.

The remaining hybrids described in 1880, with the single exception of

Cattleya × Manglesii, which, however, flowered in 1866 for the first time (*vide supra*, p. 5), were all Cypripediums, several of them the work of a new operator, as will presently be seen.

The first of them was Cypripedium × Morganiæ, derived from C. superbiens fertilised with the pollen of C. Stonei. This magnificent hybrid was raised by Mr. Seden, and dedicated to Mrs. Morgan, an enthusiastic collector of Orchids in the United States. It was described as C. × Morganianum, but the name has since been changed to the feminine termination, by common consent, in accordance with a custom long since recognised. Its resemblance to C. Stonei platytænium was originally pointed out by Reichenbach, who, remarking on its free growth, observed: "Hence it may be foreseen that it will form the pleasure of many collectors when C. Stonei platytænium will be kept as a monopoly by Mr. J. Day and his best friends"—a prophecy which, if not fulfilled to the letter, has at least proved true in the spirit.

A batch of four hybrids raised by a new operator next appeared. These were described all together, under the names of C. × meirax, C. × chloroneurum, C. × politum, and C. × melanophthalmum. Reichenbach spoke of them as a lot of fresh hybrids, raised by Mr. Robert Warner, of Broomfield, whose history is not known, probably in consequence of a lost pocket-book. All of them, however, he believes had C. venustum as one parent, on account of their marked resemblance to that species. The opinion has since been expressed that all originated from the same cross, and are, properly speaking, varieties of one hybrid. C. barbatum is believed to have been the other parent.

Cypripedium × calanthum was described near the end of 1880, but is said to have flowered for the first time in September, 1878. It was raised by Mr. Seden from C. barbatum biflorum crossed with the pollen of C. Lowii. It is said to be a free grower, though it still seems to be a rare plant.

In 1881 nine hybrids were described, belonging to the genera Cypripedium, Selenipedium, Cattleya, and Calanthe, and furnished evidence that two new operators had entered the ranks of the hybridists.

The first was a Selenipedium, obtained by Mr. Seden from S. longifolium crossed with the pollen of S. × Sedeni. It was described as Cypripedium × calurum. It differs from S. × Ainsworthii in very slight characters, and has since been considered as a variety of the same. This plant had S. Roezlii as the seed parent, which, however, is now regarded as only a geographical variety of S. longifolium, the seed parent of S. × calurum.

Calanthe × Barberiana was raised by Mr. J. T. Barber, of Spondon, Derby, from C. Turneri nivalis crossed with the pollen of C. vestita. Its flowers are pure white with a small yellow stain at the base of the lip.

Calanthe Turneri, however, is scarcely more than a variety of C. vestita, characterised by its constricted pseudobulbs and later period of flowering, and C. × Barberiana may therefore also be considered as a variety of the same..

Cypripedium × calophyllum, which was next described, is stated to have been "one of the oldest artificial hybrids, having been gained at the Royal Exotic Nursery a long time ago. Accidentally it was never described, and now it comes from a second source—Mr. B. S. Williams." C. barbatum ♀ and C. venustum ♂ were the parents, hence it is of the same origin as C. × politum and its allies described a few months earlier.

Calanthe × bella was raised by Mr. Seden from C. vestita Turneri crossed with the pollen of C. × Veitchii. Its flowers are delicate light rose suffused with white, the lip with a carmine-rose spot at the base.

The next hybrid was a Selenipedium, raised by John C. Bowring, Esq., Forest Farm, Windsor, from S. caricinum and S. Roezlii, the latter being the pollen parent. It was described as Cypripedium × conchiferum. "All the colours are very ethereal," remarked Reichenbach, "and the plant will only be appreciated by gentlemen of refined taste."

Calanthe × Sandhurstiana, which was next described, was raised by the late Mr. P. H. Gosse, of Sandhurst, Torquay, from C. rosea crossed with the pollen of C. vestita. Thus it is of the same descent as C. × Veitchii, and must be considered as a highly-coloured variety of it, with a deeper instead of a paler blotch at the base of the lip.

Selenipedium × grande was raised by Mr. Seden from S. Roezlii crossed with the pollen of S. caudatum. It is exceedingly vigorous, free-growing, and floriferous, in which respect it resembles the mother plant, but the flowers are considerably modified in the direction of those of the pollen parent. The fertilisation took place in 1875. It was a great acquisition to the group.

Cypripedium × gemmiferum was raised by J. C. Bowring, Esq., Forest Farm, Windsor, it is said, from C. Hookeræ, fertilised with the pollen of C. purpuratum. Thus it is the first hybrid derived from the last-named species. The purple of the parent species is not so conspicuously present in the hybrid as one might have expected.

Cattleya × Chamberlainiana, the last hybrid of the year, was a striking and very interesting form. It was raised by Mr. Seden from C. Leopoldi fertilised with the pollen of C. Dowiana. The sepals are amethyst-purple, toned with tawny yellow; petals similar, but of a rather darker tint, quite unlike that of any other Cattleya known. It was named in compliment to the Right Hon. Joseph Chamberlain.

(*To be continued.*)

LYCASTE MESOCHLÆNA.

This is one of the best of the cultivated Lycastes, but its history is one mass of confusion, as the synonymy cited at the foot of this article will show, and it is very seldom found in gardens under its correct name. It was discovered by Warscewicz at the head waters of the Maranon river, in Peru, and described by Reichenbach in 1854. Previous to this, however, in May, 1853, plants were sold at Stevens' Rooms under the name of Maxillaria conica, the flowers being described as ivory-white. One of them, which passed into the collection of the Bishop of Winchester, flowered at Farnham Castle, in 1855, as we learn from Dr. Lindley. Afterwards it became in some way confused with Lycaste costata, Lindl., under which name it is usually cultivated. It was also figured under the name of Lycaste Barringtoniæ variety grandiflora, a quite incorrect denomination.

L. mesochlæna is a bold and striking species, with large pseudobulbs, very broad leaves, and a profusion of flowers borne on short peduncles, about six to eight inches long. The flowers are ivory-white, or suffused with a flush of pale yellow or sometimes very pale green. The true L. costata, Lindl., which, if in cultivation, is excessively rare, may at once be distinguished by its narrower leaves and peduncles a foot long, besides certain floral differences. L. Barringtoniæ has much smaller flowers with green sepals and petals. The following is the synonymy of the present species:—

Lycaste mesochlæna, Rchb. f. in *Bonplandia*, ii. p. 98; Lindl. in *Gard. Chron.*, 1855, p. 788.
L. costata, Regel, *Gartenflora*, xviii. p. 195, t. 620; id., xxxiii. p. 2, t. 1141.
L. Barringtoniæ, var. **grandiflora, Hook. f.** in *Bot. Mag.*, xciv., t. 5706.

CYPRIPEDIUM CHAMBERLAINIANUM.

A plant of this handsome Cypripedium, so recently introduced by Messrs. F. Sander and Co., of St. Albans, has been flowering continuously for the last three months, in the collection of W. G. Marshall, Esq., of Norton Manor, Taunton. In a note accompanying one of the flowers, Mr. Marshall remarks that he has several plants of it, and all of them free bloomers. All are flowering from the growths made before importation, as they have not yet had time to become established. It now appears pretty certain that the racemes continue to elongate and develop flowers in succession for a long period, and that the long racemes of very numerous bracts seen in wild specimens are due to this peculiarity.

CYCNOCHES PENTADACTYLON.

We have much pleasure in presenting our readers with the accompanying illustration of the magnificent specimen of Cycnoches pentadactylon, which

FIG. 4. CYCNOCHES PENTADACTYLON.

was exhibited by W. W. Mann, Esq., of Ravenswood, Bexley, at a meeting of the Royal Horticultural Society, on January 17th last, to which a First-class Certificate was deservedly awarded. It is reproduced

from a photograph kindly sent by Mr. Mann for the purpose. Those who know the species as it generally appears in cultivation will not fail to appreciate the beauty of this particular plant, and the evidence of high cultural skill it affords on the part of the gardener, Mr. J. Simmon. It bore ten drooping racemes, five on one pseudobulb, three on another, and two on the third, and these together bore no less than 247 flowers, 37 being borne on one raceme. Our illustration, though necessarily much reduced, gives a graphic idea of its appearance, which no words could convey. The flowers are about three inches in diameter; the sepals and petals reflexed, cream-white, tinged with greenish yellow, and heavily blotched with deep purple-brown; the erect lip reduced to five narrow lobes or fingers (in allusion to which the name was given); and the column long, slender, and arching, like a swan's neck.

The species was described just half a century ago by Dr. Lindley, from a seven-flowered raceme sent by Messrs. Veitch, of Exeter (now of Chelsea), in March, 1842, and a plant which soon afterwards flowered with Messrs. Loddiges, of Hackney, which they had received from Brazil. It was described with much hesitation, and with the evident suspicion that it might be only a sport from C. maculatum. In fact, Lindley spoke of the difficulty of judging what was a species and what a mere sport, and alluded to the Catasetum group as one "among which we find the most astonishing deviations from ordinary structure, and the most startling variations from what appears to be the rule in other parts of the organic world. If," he continues, "we were informed that the camelopard in the Zoological Gardens had shortened the vertebræ of its neck, till it was no longer than a cow's, or that a kangaroo had exchanged its tail for the switch of a Shetland pony, a more surprising thing would not be announced than those changes with which we are now familiar in this group of Orchidaceæ." All of which now appears very amusing, and indicates how little the phenomena observed in other species had been understood. We now know that the sexes are borne in different flowers, which are often quite unlike in appearance.

Until 1889 the female flowers of the present species appear to have been unknown, when they suddenly appeared on a plant in the collection of E. Gotto, Esq., of The Logs, Hampstead Heath, together with the males. How diverse are the two sexes may be seen on reference to the figure in the *Gardeners' Chronicle* cited below, where, however, they are represented upside down. It is not at all unlikely that females may appear on the present plant at a future flowering, in which case we hope to receive further materials.

The specimen now figured, splendid as it is, does not represent the maximum development of the species. Mr. Edward Rand, of Pará, Brazil, who takes a special interest in this group of Orchids and cultivates them

largely, and who, in fact, has added considerably to our knowledge of the subject, states that it is the giant of the River Purus, and is without exception the most beautiful and fragrant Amazonian Orchid he knows, and that a single flower will fill the air for yards with its delicious vanilla-like fragrance. He has seen the pseudobulbs three feet long and two inches in diameter, with flowers of both sexes on the same pseudobulb. The males were borne from the top of the pseudobulbs, in drooping racemes over two feet in length, and carrying from fifty to seventy flowers. The female racemes were borne near the base of the pseudobulbs and carried from one to three flowers.

We sincerely hope that the appearance of the present plant may help to popularise a neglected, but extremely interesting genus.

Cycnoches pentadactylon, Lindl. *Bot. Reg.*, xxix., Misc., p. 18; id., t. 22; Rolfe in *Gard. Chron.*, 1889, pt. ii., p. 188, fig. 26; *Journ. of Hort.*, 1893, pt. i., pp. 94, 95, fig. 14; *Gard. Mag.*, 1893, pt. i., p. 77, with plate.

PHALÆNOPSIS SCHILLERIANA VESTALIS.

Albino forms of the beautiful Phalænopsis Schilleriana are excessively rare. The one above named was described by Reichenbach upwards of ten years ago (*Gardeners' Chronicle*, 1882, pt. i. p. 130), from the collection of Messrs. Hugh Low and Co., of Clapton. A plant was exhibited by them at the last meeting of the Royal Horticultural Society, held on February 14th, last, and was deservedly awarded a First-class Certificate. It is said to be the only plant known in England. The flowers are snow-white, with the exception of some light brown spots on the inner halves of the latteral sepals, a few yellow-brown ones near the base of the side lobes of the lip, and a yellow crest. It is a chaste and very beautiful form. The variety immaculata differs in having no spots anywhere, the crest alone being pure yellow. There is, however, a faint flush of pale rose sometimes present in the flower. It was described by Reichenbach as long ago as 1875 (*Gardeners' Chronicle*, 1875, pt. i. p. 429), from the collection of J. T. Barber, Esq., of Spondon, near Derby, having been obtained from an importation made by Messrs. Hugh Low and Co. Another plant flowered in February, 1891, from an importation made by the same firm. They contrast effectively with flowers of the ordinary rosy form.

A FINE RESTREPIA ANTENNIFERA.

A magnificent specimen of the elegant Restrepia antennifera is now flowering in the collection of M. A. A. Peeters, of Brussels. It measures about two feet in diameter, and bears nearly three hundred flowers. C. *de B.*

NOVELTIES.

PLEUROTHALLIS RHOMBIPETALA, Rolfe.—A botanical species, introduced from Mount Roraima by Messrs. Charlesworth, Shuttleworth, and Co., of Heaton, Bradford, with whom it flowered last December. It is allied to the Brazilian P. arcuata, Lindl. It bears lax racemes of flowers, the sepals pale green with dull purple spots on the dorsal one, the petals dull maroon-purple, and the lip pale green with a few dark purple spots on the margin.—*Kew Bulletin*, 1893, p. 4.

BRACHIONIDIUM SHERRINGII, Rolfe.—An interesting addition to this singular little genus. It was discovered by R. V. Sherring, Esq., in the island of Grenada, West Indies, growing on a tree fully exposed to the sun and all the force of the wind, at Fedon's Camp, at 2,400 feet elevation. It is described from dried specimens. The three previously recorded species are all natives of the Andes. The genus is nearly allied to Masdevallia.—*Kew Bulletin*, 1893, p. 4.

BULBOPHYLLUM SANDERIANUM, Rolfe.—A Brazilian species, introduced from the province of Pernambuco with Cattleya labiata and other Orchids by Messrs. F. Sander & Co., St. Albans, with whom it flowered last July. It is allied to B. meridense, Rchb. f., and B. geraense, Rchb. f. It bears long racemes of flowers, the sepals pale green with small brown spots, the petals white with purple margin and a few similar spots, and the very hairy lip deep purple-brown.—*Kew Bulletin*, 1893, p. 4.

BULBOPHYLLUM VITIENSE, Rolfe.—A botanical species, sent to Kew from the Botanical Station, Fiji, by Mr. Daniel Yeoward. It flowered in August of last year. The flowers are pale yellowish-white, with the upper half of the sepals light pink. B. rostriceps, Rchb. f., is mentioned as the one other species known from Fiji.—*Kew Bulletin*, 1893, p. 5.

MEGACLINIUM MINUTUM, Rolfe.—The smallest known species of the genus, being only about two inches high. It was sent to Kew by G. F. Scott Elliot, Esq., naturalist to the recent Sierra Leone Delimitation Commission, from Sugarloaf Mountain, where it grows at 3,000 feet elevation. The curiously flattened rhachis is purple-brown, and the flowers dull maroon and greenish yellow.—*Kew Bulletin*, 1893, p. 5.

PHAIUS ROSEUS, Rolfe.—A very distinct and pretty Phaius, collected by the Right Hon. Earl of Scarborough, in whose collection it flowered in December last. It is believed to be a native of West Tropical Africa. The flowers are of a delicate light rose shade, the lip somewhat marbled with white spots, the disc with a white hairy keel, and the spur deep yellow. The flowers pass to light orange-buff in fading.—*Kew Bulletin*, 1893, p. 6.

PHOLIDOTA LUGARDI, Rolfe.—A native of the Chin Hills, Western Burma, at 6,000–8,000 feet elevation, whence it was sent to Sir John Kirk, of Wavertree, Sevenoaks, Kent, by Captain Lugard. It flowered in

June, 1890. It is allied to P. articulata, Lindl., but is more erect and robust and larger in all its parts.—*Kew Bulletin*, 1893, p. 6.

EPIDENDRUM (BARKERIA) PALMERI, Rolfe.—A distinct Epidendrum belonging to the section Barkeria, collected by Mr. Edward Palmer, at Colima, Mexico, in 1891. It is characterised by its narrow leaves, small bracts, and numerous flowers with papillose nerves to the lip. It is described from dried specimens.—*Kew Bulletin*, 1893, p. 6.

SARCOCHILUS MUSCOSUS, Rolfe.—A botanical species, sent from the Andaman Islands, together with Phalænopsis tetraspis, by E. H. Man, Esq. It flowered in the Kew collection in November last. It has dull yellow flowers spotted with red-brown, and a white lip with a few small purple spots round the mouth of the spur. The scapes are hispid.—*Kew Bulletin*, 1893, p. 7.

PELEXIA MACULATA, Rolfe.—A distinct species, with olive-green leaves blotched with whitish green on the upper surface, and dull purplish green below. The flowers are pale dull green, the sepals and petals tipped with pink, and the lip white. It flowered in the Glasnevin Botanic Garden in July last, under the care of Mr. F. W. Moore. It is believed to have been introduced by Messrs. Hugh Low and Co., of Clapton, but its habitat is not recorded.—*Kew Bulletin*, 1893, p. 7.

CYPRIPEDIUM VILLOSUM var. Gortoni, O'Brien.—A variety sent to Dr. Gorton, of Maida Vale, London, by his nephew, from the extreme north of Burma. It chiefly differs from the type in its more purple flowers, the dorsal sepal with a green area near the apex and a white margin.—*Gardeners' Chronicle*, January 14th, p. 40.

MASDEVALLIA TROGLODYTES.

A plant of this curious Masdevallia is now flowering in the Glasnevin Botanic Garden under the charge of Mr. F. W. Moore. The species was originally sent from New Granada by M. Lalinde, and was sold at Stevens' Rooms in April, 1873, and flowered in the collection of M. Oscar Lamarche de Rossins, of Liége, in December, 1876, when it was described by E. Morren. It has a cup-shaped perianth, something like that of M. Carderi but less truncate, the colour inside, as well as the tails, blackish maroon, but outside of a dingy grey. The name was given in allusion to the petals and column looking like a "Troglodyte hidden in his cave." The resemblance, however, is more apparent in the coloured plate (cited below) than in the living specimen. The fact is the petals and column of most of the species of the section Saccolabiatæ would serve equally well as an illustration.

Masdevallia Troglodytes, E. Morr. in *Belg. Hort.*, xxvii. (1877), p 97, t. 5.

THE CLARE LAWN COLLECTION.

THE collection of Orchids at Clare Lawn, East Sheen, the residence of F. Wigan, Esq., J.P., though not so large as those previously noted in these pages, contains a number of very interesting features, and is famed for the successful cultivation of Phalænopsis, Lælia majalis, and one of two other things which do not succeed everywhere. Ten houses are devoted to Orchids; some of them being rather small, but they are filled with a representative collection of healthy and well-cultivated plants, which testify to the skill and intelligence brought to bear on their culture by Mr. W. H. Young, who has charge of the collection. Specimens from it are familiar to those frequenting the meetings of the Royal Horticultural Society, where they have been exhibited with success on various occasions.

The Phalænopsis house is the feature of the collection, and a few notes about it will certainly be interesting to our readers. We may, however, take the different houses in the order which we passed through them at our recent visit.

In the first house we observed some good specimens of the ever-popular Cœlogyne cristata, without which no good collection would be complete. Also a large plant of C. barbata, Oncidium Cavendishianum, throwing up several flower-spikes, Cymbidium elegans, C. eburneum, etc.

The Masdevallia house contains most of the varieties commonly cultivated, also large plants of M. leontoglossa, M. Mooreana, and M. macrura. We observed in flower M. ignea, M. polysticta, with its racemes of purple spotted lilac flowers, with yellow tails; also the hybrids M. × Chelsoni and M. × Hincksiana. A curious feature of the latter is that its flowers are buff yellow on first opening, but gradually pass to cream-white before fading. The effect of two differently coloured flowers on the same spike, as seen in strong specimens, is very pretty. The plant here seen had two flowers but not on the same spike. In this house are the Pleiones, which are here grown with great success.

In another compartment of the same range the Miltonias are grown. M. vexillaria, M. spectabilis Moreliana, M. Russelliana, and others being represented. On a shelf in this house is grown a grand batch of the chaste Masdevallia tovarensis; Cymbidium tigrinum also is grown here and flowers annually.

Another house contains the Vandas of the tricolor section, the Angulœa and other plants, with a batch of the beautiful Odontoglossum citrosmum suspended from the roof.

In the East Indian house are several plants worthy of mention. Cœlogyne pandurata is represented by three large plants, one of which is sending up a fine spike. Stauropsis gigantea, generally cultivated under the name of Vanda gigantea, is throwing up a spike from a plant which

last year bore three. This is an Orchid now seldom met with in collections. Stauropsis lissochiloides, generally known as Vanda Batemanii, is also represented. It flowered well last year, one spike carrying over sixty flowers. Here, too, is the fine plant of Grammatophyllum Seegerianum which was exhibited last year at the Temple Show; also a large plant of Grammangis Ellisii, a batch of Miltonia Roezlii, Vanda teres, which flowers annually, Arundina bambusifolia, also a plant of Epidendrum Stamfordianum, showing for flower. Cypripedium × selligerum, C. × Dauthieri, and C. × Germinyanum were in flower, the latter a decidedly bold and striking thing. Calanthe × bella and C. Regnieri, also a good plant of the fine Dendrobium × splendidissimum, with numerous flowers, helped to brighten up the house. A plant of D. nobile carries a good seed-capsule, obtained by crossing with the pollen of D. superbum, which in time may yield good results.

The Cattleya house contains most of the generally grown kinds of Cattleya and Lælia, including some good forms of Lælia anceps and its white varieties, Stella, Williamsii, and Sanderiana, just passing out of flower, Lælia præstans, in flower, fine plants of Lælia majalis, one of which received an Award of Merit from the Royal Horticultural Society two years ago. Also some good forms of Lælio-cattleya × elegans, and L. × Schilleriana. Aërides Fieldingii and A. crassifolium are also grown in this house, together with the Sobralias, of which S. macrantha, S. leucoxantha, S. xantholeuca, and the rare S. Ruckeri are represented.

In the Odontoglossum house we observed several flowering examples of O. gloriosum and O. Sanderianum, also a fine yellow hybrid, probably a form of O. × baphicanthum. Over a thousand plants of O. crispum are grown, besides numerous other species. A plant of Oncidium insculptum has a spike over twelve feet long with over seventy flower buds.

We now come to the famed Phalænopsis house. It is a structure twenty-five feet long by twelve feet wide with a low span roof, and is situated at the north side of a high wall, which excludes every ray of sunshine during the winter. It has bottom ventilators only, and water tanks below the stages. The paths are of gravel, which is kept forked loose. About three hundred and fifty plants of the different species are suspended from the roof, in teak baskets, which are often small in comparison with the size of the plants. Many of the plants are in the most luxuriant health. P. Schilleriana is grown in quantity, P. Stuartiana, P. Sanderiana, P. amabilis (Blume), and P. Aphrodite are well represented. P. speciosa and its variety Imperatrix grow and flower vigorously. The latter, which has nine leaves, some over a foot long and five to six inches wide, is a splendid form, and has received an Award of Merit from the Royal Horticultural Society. P. tetraspis and P. Boxalii are also represented, the latter being in flower, also the natural hybrids P. × leucorrhoda, P. ×

casta, a magnificent plant, the original plant of P. × Cynthia, P. × intermedia, and its variety Portei. A good plant of Angræcum caudatum and several Saccolabiums also find a place. The stages of the house are filled with Cypripediums and Selenipediums, some of the rarest being C. × Niobe, C. × Bragaianum, C. × microchilum, C. × macropterum, C. Aylingi, and C. × Juno (a cross between C. callosum and C. Fairieanum, of which it is said only three plants are known. Selenipedium × Sedeni candidulum and the new Veitchian hybrid S. × Penelaus were both in flower. Here are also several promising hybrids, including Cypripedium niveum × superbiens, C. hirsutissimum × Druryi, and others.

A little lobby annexed to this house serves admirably to prevent draughts of cold air from reaching the plants, as the outer door can be closed before the other is opened. Here, suspended from the roof, is a batch of Barkeria Lindleyana in the most robust health, the lower part of the stems being covered with healthy white roots. It is not every one who succeeds with these plants, but here they seem quite at home, and some time ago flowered in profusion.

The last house is a "rock house," being built up with masses of tufa. Here among the ferns are arranged numerous plants of Cypripedium insigne and Cymbidium Lowianum, which seem quite at home. The latter is now throwing up its flower-spikes.

We may fittingly conclude our account of a very interesting collection with a few additional notes on the treatment of Phalænopsis here carried out. The baskets are filled with potsherds and sphagnum moss, no charcoal being used, and only enough moss to keep a supply of moisture about the roots in hot weather. In May the plants are overhauled, first being allowed to become somewhat dry. Then the old moss is washed out with a syringe and replaced with new, only being transferred to larger baskets when this is absolutely necessary. During summer they are always kept moist, almost saturated at the root, the leaves being lightly sprayed over with the syringe in hot weather, the temperature kept from 70° to 85°, and the atmosphere at saturation point. In winter less water is given, but when dry they are dipped overhead. The temperature then ranges from 60° by night to 65° by day, or if mild about 5° higher. Whatever is the secret of success, whether the structure and position of the house, or the treatment adopted, or the two combined, certain it is that they are grown here with great success, and where these plants do thrive, few Orchids can surpass them in grace and beauty.

SELENIPEDIUM × CARDINALE.

THE beautiful hybrid here figured was raised by Mr. Seden in the establishment of Messrs. Veitch, of Chelsea, and flowered for the first time in 1882.

It was obtained by crossing S. × Sedeni with the pollen of S. Schlimii albiflorum, and as the mother plant was derived from S. longifolium and S. Schlimii, the present hybrid represents one move back to the last-named species. Its parentage may be thus represented:—S. Schlimii $\frac{3}{4}$, S. longifolium $\frac{1}{4}$.

Fig. 5. SELENIPEDIUM × CARDINALE.

It is one of the most attractive hybrids in the genus, as the white sepals and petals contrast effectively with the bright carmine-rose lip, and set it off to the greatest advantage. In some forms the dorsal sepal and petals are lightly flushed with pale rose. The photograph here reproduced is from a flower kindly communicated by Baron Sir Henry Schröder, of The Dell, Egham.

Selenipedium × cardinale, Rchb. f. in *Gard. Chron.*, 1882, pt. ii. p. 488 (in note); *Desbois Monogr. Cyprip.*, p. 145.

Cypripedium cardinale, Rchb. f. in *Gard. Chron.*, 1882, pt. ii. p. 488; *The Garden*, xxvii. p. 520, t. 495; *Veitch Man. Orch.*, pt. iv. pp. 102, 103, with fig.; *Orch. Album*, viii. t. 370.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 48.)

An Orchid equally if not more widely distributed is Dendrobium secundum. This plant, however, does not, as is the case with many others, show an appreciable differences in the stem, the variation being in the colour of the flowers. The general colour of the flowers of the variety found on the Asiatic continent is rose-purple. That of the varieties found in the various Malayan islands is rose, white tipped with rose, and white. Of the many islands I visited in the Malay Archipelago, I do not recollect one in which this Dendrobium was not very plentiful.

In 1880, when I visited North Andaman, and made friends with the previously hostile natives of that island, I found the Andamanese on one occasion very busy beating out the fibre of the stem of a Dendrobium. On examination I found the stems to be those of D. secundum. On asking what they used the fibre for they pointed to their fishing arrows.

In these islands the natives kill the fish by shooting them with a specially formed arrow. The arrow head is let into a slot in the arrow, and attached to a long string which is wound round the arrow. When the head strikes the fish the string is unravelled, leaving the arrow floating on the surface of the water; thus enabling the natives to swim out and secure the fish; such a string requires to be of great toughness, and in the fibre of this plant the natives have found a material suited to their wants.

It often struck me that this fibre might be of commercial value. There would be little difficulty in getting plenty of the plant, as it grows in immense masses on the trees along the coast. As a florist's flower it is not sufficiently attractive, but some of the white and light rose insular forms, are decidedly pretty, and worthy of a place in collections. This plant is only found in very hot countries. I am not aware of any variety of it being found in the hills.

Another polymorphous species which naturally attracts attention is Dendrobium aureum. This lovely species has four quite distinct varieties so different that they are easily distinguishable from each other.

The first in order is the form common in our collections, which is found in the mountain ranges of Assam and Burmah, from the Khasia Hills to the hills at the back of Moulmein on the frontier of Siam. This is the variety found in many collections under the name of D. heterocarpum. The stems are erect, short, and stout, and rather smooth, and this variety extends throughout the hills above noted, being a distance from north to south of about five hundred miles.

The nearest variety to this is the form found in Mysore, and in the

Neilgherry, Pulney and other ranges of hills on the Western Ghauts of India. This variety, being separated from its ally by a distance of at least one thousand miles, is totally different in appearance. The stems are no longer short and stout, but of considerable length, and more slender than those of the common form.

The Ceylon form, as one would expect, comes near to this, but is again distinct, as although rather slender, like the Indian form, the stems are longer, frequently three feet long, and as they are formed throughout of swollen internodes, it is a variety that cannot possibly be mistaken.

All these three varieties have deliciously sweet-scented flowers, and are also found up in the hills at from four to six thousand feet above the sea level, and therefore are easy to grow in our houses in England.

The fourth variety of Dendrobium aureum is that found in the Philippine Islands. The form of the plant is again modified by the great geographical distance at which it is found separated from its allies. The stems of this plant are long and smooth, and the sweet scent found in the other forms is absent.

Perhaps the Philippine Islands, having been so long separated from the adjacent continent, have lost the pollinating insect attracted on the continent by the sweet scent of the flowers, so that scent is no longer a necessity to the Philippine plant. All the varieties are pretty and well worth growing, the Philippine variety requiring more heat than the three others, which also flower earlier; indeed the ordinary form may be had in flower from November to February, at a time when good flowers of Dendrobiums are scarce.

(*To be continued.*)

THE CULTURE OF HABENARIA MILITARIS.

By W. H. White.

This brilliant scarlet-flowered terrestrial Orchid from Cochin China is a plant that has always been greatly admired when in bloom. Unfortunately, considerable difficulty has been experienced by many growers in successfully cultivating this little gem; which has caused much disappointment. I have no doubt that many failures have resulted from growing the plants in too low a temperature, keeping them too dry while in a dormant state, and using unsuitable material to root in. I know of one instance where the plant, having finished its growth, and the leaves and stem naturally died down, was thought to be dead, and in consequence thrown on the rubbish heap. What a great mistake! for as soon as the stem has decayed, the tubers begin to ripen and

prepare for the following season's growth, which commences about the beginning of March.

Habenaria militaris is an Orchid which has proved to be of the easiest cultivation when its requirements are properly understood. I would recommend all Orchid lovers to try again with this beautiful plant, as it is deserving of every attention, not only as a decorative plant, but also for cutting.

The following method of culture has, with us, yielded eminently satisfactory results. In the first place, use pots as small as possible, those generally termed long thumbs being preferable for the largest and strongest tubers. These tubers will be from two to three inches in length, and the pots about four inches deep. Secure the drainage by putting a sound piece of crock over the hole at the bottom, then place the tuber in the centre of the pot, keeping the crown about half an inch below the rim, and filling half way up with clean broken crocks, so that when re-potted, part of the tuber will be in the crocks and part in the compost. Over the drainage place a thin layer of sphagnum moss, and fill up with the following compost, just covering the top of the tuber. One half should consist of good fibrous peat, loam, and moss, in equal proportions, the other half of broken pieces of crocksherds about the size of a pea and smaller, adding a sprinkling of coarse silver sand, mixing the whole well together, and potting moderately firm. One shift will be sufficient for the season. I need scarcely remark that the smaller the tubers, the less pot room will be necessary. When this operation is completed, sprinkle the soil lightly with a fine rose watering-can, and place the plants on the shady side of the East Indian house, or plant-stove, where the temperature is hot and moist, and as near to the roof glass as possible. This is very important, as if they are placed low down on an ordinary stage the stems become drawn up, and the flower-spikes weak. As growth advances, gradually supply the plants with moderate waterings; when in full growth, they will take almost any quantity. During bright summer weather, well syringing the under parts of the foliage will be very beneficial. Care must also be taken to keep the plants well shaded from the hot rays of the sun.

Immediately the flowering period is over, the plants will commence to change colour, when less water will be required, and the quantity should be gradually diminished until the leaves and stem have completely died down. Do not cut the stem off when decaying; if left alone it will naturally fall away.

During the resting period, keep the pots on a dry shelf close to the roof glass, in the same house in which they were grown, but on no account allow the compost to remain dry for any great length of time, as over-dryness will cause the tubers to shrivel, in which case it is

doubtful if they will ever regain their natural plump condition. Examine them at least once a week; when those that are dust dry should be stood down by themselves, and receive a good sprinkling of water from a fine rose-can.

This Orchid may be propagated by separating the tubers when turning them out of their pots before re-potting; and the freedom with which it can be increased enables one to raise a stock quickly. On an average we obtain two new tubers from each one every year; the old ones at the same time continuing to grow and increase.

When in full growth, a sharp look-out must be kept to prevent thrips from disfiguring the foliage, which is quite as ornamental as that of many stove plants. The best plan to keep the plants clean, and free from these insect pests, is frequent dipping, as previously advised for Miltonia vexillaria in the Calendar of Operations for February.

THE HYBRIDIST.

Dendrobium × burfordiense.

There is one invariable good quality that hybrids from Dendrobium aureum possess, and that is that the lip is comparatively spreading or reflexed, and consequently shows off to advantage. This is well seen in D. × Ainsworthii, D. × Leechianum, and D. × splendidissimum, all derived from D. aureum and D. nobile. The present hybrid was derived from D. Linawianum ♀ and D. aureum ♂, in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, by Mr. W. H. White. It is a charming little thing, and may be compared to D. × Dominianum (D. nobile ♀ × D. Linawianum ♂), except that the sepals and petals are more spreading and of a lighter shade, and the lip flatter, more reflexed, and with a smaller disc. The sepals and petals are pale blush, passing into light rose-pink near the apex, and the lip with a small maroon disc, a white zone round it, and a rose-pink tip. It is of free growt and very floriferous.

Phaio-calanthe × Sedeniana rosea.

Phaio-calanthe × Sedeniana was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Phaius grandifolius fertilised with the pollen of Calanthe × Veitchii. It is a beautiful thing with flowers of a shade of pale primrose yellow. It is interesting to note that the reverse hybrid has now been raised, by Mr. W. Lambert, gardener to John Riley, Esq., J.P., of Hapton House, near Burnley. In this case the hybrid Calanthe × Veitchii was the seed parent, the pollen being derived from

Phaius grandifolius. It differs from the original form, however, in having the lip light rose-colour, marbled with a somewhat deeper shade, and in having a rosy-red line down the centre of each petal. It may therefore bear the name above given, in order to distinguish it from the original form. Like the type, it is an evergreen plant, and as the spike bore twelve flowers it is a decidedly promising acquisition. It was raised four years ago, and flowered for the first time in January last.

CALANTHE × GIGAS.

In the Vestitæ section of Calanthe the hybridists have intermixed the species and varieties to such a degree that it is no easy matter to discriminate between some of the resulting forms. They constitute, however, a group of the highest possible value as winter-blooming decorative plants, and there can be little doubt that further developments are in store, as various hybridists are working at them from the florist's standpoint. One of the best is the fine form exhibited by Messrs. James Veitch and Sons, at the Drill Hall, on January 17th last, under the name of Calanthe × gigas, which was obtained from C. vestita gigantea crossed with the pollen of C. Regnieri Sanderiana, one of the handsomest and most robust yet obtained. The flower scape is over five feet high, and bears twenty-five to thirty flowers, which are nearly three inches across. The sepals are milk-white and much acuminated at their tips; the petals are shorter, more obtuse, and have a faint tinge of rose both at the base and apex; the four-lobed lip is bright-rose, striated with pale-rose or white, and with a deep red-crimson blotch at the base, which spreads into the tube formed by the adnate claw and column, the latter being light-rose. It deservedly received the award of a First-class Certificate from the Orchid Committee. It is a decided acquisition to the group.

DENDROBIUM × CHLOROSTELE VAR. OWENIANUM.

This handsome hybrid was raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, by Mr. Murray, from D. Linawianum crossed with the pollen of D. Wardianum giganteum. It is a robust plant with pseudobulbs about three feet long. The flowers are smaller than those of the pollen parent but with the same general shape. The sepals are light blush-pink below, passing into rose-purple near the tips. The petals are similar above, but the lower half of each is nearly white. The disc of the lip bears a medium-sized maroon blotch, surrounded by an orange-yellow zone, then a nearly white area, and, finally, a rose-purple tip. The pedicles are $2\frac{1}{4}$ inches long, hence it is likely to prove useful for cutting. It flowered for the first time in 1891. Messrs. F. Sander and Co., of St. Albans, have now acquired a stock of it, and on February 14th last, were awarded a First-class Certificate for it by the Royal Horticultural Society.

under the name of D. × Owenianum, but it seems preferable to regard it as a variety of D. × chlorostele, Rchb. f., raised in the collection of Sir Trevor Lawrence from the same parentage. Our novelty was dedicated to J. Dyson Owen, Esq., of Selwood, near Rotherham, Yorks.

Phaius × amabilis.

Much interest was aroused when Norman C. Cookson, Esq., exhibited at a meeting of the Royal Horticultural Society in March, 1890, a beautiful hybrid Phaius which he had raised from P. Wallichii ♀ and P. tuberculosus ♂. It was evident from the plant exhibited that the last-named species would become a potent agent in hybridisation, especially if the difficulties attending its cultivation should be overcome. We have now to record the appearance of another equally distinct and beautiful hybrid obtained by Mr. Seden in Messrs. James Veitch and Sons' nursery, from P. grandifolius ♀ and P. tuberculosus ♂, which received the award of a First-class Certificate at the meeting of the Royal Horticultural Society on February 14th. The following is a description of the plant. Rhizome very short. Pseudo-bulbs and leaves intermediate. Scape about a foot high, and five-flowered in the plant exhibited. Flowers about three inches across from the tip of the dorsal sepal to the apex of the lip. Sepals and petals white tinted with light-rose, milk-white behind; the sepals lanceolate-oblong, apiculate; the petals a little shorter and broader, obovate-oblong, acute; lip suborbicular when spread out, much crisped at the margin, convolute over the column at the base, reddish-crimson striated with white, and with three pubescent yellowish keels on the disc, the basal area on the under side greenish-yellow.

Cypripedium × Eucharis.

A pretty hybrid raised in the collection of M. Charles Vuylsteke, of Loochristy, Ghent, from C. insigne Chantini ♀ and C. Lawrenceanum. It would appear to be somewhat analogous to C. × Ashburtoniæ.—F. Desbois in *Gardeners' Chronicle*, Feb. 18th, p. 195.

Cypripedium × Paris.

Cypripedium bellatulum was introduced as recently as 1888, and, as was inevitable, was at once brought into requisition by the hybridist. Three, at least, of its descendants have already flowered, C. × southgatense, C. × Lawrebel, and the present one. The photograph here reproduced was taken from a flower kindly sent by R. H. Measures, Esq., of The Woodlands, Streatham, the possessor of probably the finest collection of Cypripediums in existence. Mr. Measures states that he bought it among a batch of seedlings, but never knew the actual raiser. It is the only plant known. C. bellatulum was the seed parent, and the pollen is said to have been

derived from C. Stonei. So totally different are the two parents that it becomes a somewhat difficult matter to trace their influence in the hybrid. At the first glance there seems no trace of the narrow petals and characteristic lip of C. Stonei, yet its influence has resulted in a striking modification of the C. bellatulum shape, in the dorsal sepal, petals, and lip, as is graphically represented in our figure. The ground colour of the flower is pale cream slightly suffused with pale green near the base of the segments and with a light flush of purple on the sides of the dorsal sepal and apical

Fig. 6. CYPRIPEDIUM × PARIS.

half of the petals. The markings are deep maroon-purple. The lip is suffused with light purple in front, paler behind, slightly compressed laterally; and the infolded side lobes minutely spotted with maroon-purple on a pale cream ground. The staminode is flat, suborbicular, and deep maroon-purple with a pale whitish margin. The colours are clear and brilliant, as might be expected from its parentage. The plant is said to be very robust, with much of the character of C. bellatulum. It is certainly a magnificent thing.

CALENDAR OF OPERATIONS FOR MARCH.

By W. H. WHITE, Burford, Dorking.

As the season advances the plants will be greatly aided by the increasing length of the days and by sun-heat. The latter will necessitate putting the blinds and shading in order, which should be attended to without delay. The collection as a whole will require to be protected from the hot sun, especially during the hottest part of the day, as the concentration of its rays would soon cause much disfigurement to the foliage. At this time of year one cannot be too careful in this respect, as if the shading is not properly attended to, the leaves quickly get scorched. At the same time do not allow the blinds to be down any longer than is really necessary. Fixed shadings of any sort I do not agree with, as they exclude the light, which is a necessary element in the successful cultivation of Orchids. The best system of shading is the ordinary roller blinds. These should be raised about five or six inches above the glass, by having a slight wooden framework fixed on the roof for the blinds to roll on. Abundance of light and air is thus allowed to pass between the glass and the canvas, which will help to keep down the temperature in hot weather. The fluctuations of temperature will no doubt be considerable, owing to the prevalence of cold winds, with alternating spells of bright sunshine. The houses must therefore be carefully regulated according to the weather. If it continues mild outside, more moisture may be kept in the atmosphere, and the ventilation should be gradually increased whenever practicable.

In the hottest house, where such plants as Aërides, Saccolabiums, Angræcums, &c., have been re-potted or top-dressed, a slight rise in the temperature by night may be allowed, but in other departments the temperatures previously advised should be maintained.

During the dull winter months there is no section of Orchids that brighten up the houses so effectively as the Calanthes of the vestita group. Coming from very hot countries, they require the lightest and best position in the plant stove or East Indian house. They are terrestrial; consequently the compost used should be of a firmer or more retentive nature than that used for many other Orchids. I have tried several different mixtures, but have succeeded best with the following: one-half good fibrous loam, one-fourth leaf soil, the remainder finely chopped sphagnum moss, with a good sprinkling of coarse silver sand; the whole being well mixed together. If good loam be not procurable, use fibrous peat instead, but less of it, and more moss. The compost being prepared, should be laid a few days prior to use in a suitable place to get warm, otherwise the pseudobulbs may receive a check from the cold compost.

It is difficult to determine the exact date of re-potting, which, however,

should be done as soon as or a little before the young roots appear. The latter is the safer plan, as there is then no danger of the young fibres being bruised. Previous to re-potting, shake out all the old soil, and shorten the dead roots to about an inch. This portion will help to keep the plants steady until the new roots obtain a firm hold of the compost. Clean pots should be used, the sizes varying according to the discretion of the cultivator. Where house-room is limited, and a quantity of cut flower required, I would recommend putting about four or five of the strongest bulbs into seven-inch pots, and the same number of moderate-sized ones into a six-inch pot. But if space is of little consequence, growing them in single pots is an advantage, as during the growing season each bulb can be treated separately, and when in bloom a better arrangement made, in order to show off the individual spikes to perfection. My practice has been to pot singly, using five and six-inch pots for the strongest bulbs, and proportionately smaller ones for the others. Good drainage is necessary, the pots being rather more than half filled with clean broken crocks, upon which should be placed a layer of the most fibrous part of the compost, in order to prevent the drainage from becoming choked. In filling the pots the soil should be shaken down moderately firm to within an inch of the top, then place the plant on the surface, with additional soil added, so that the base of the bulbs is just covered. This will leave about half an inch of space from the soil to the rim of the pot, which will allow of a top-dressing of good fibrous loam when the plants become thoroughly established. At that time many young roots appear on the surface, and this new soil will be very beneficial to them.

After potting, place the plants in their growing quarters, but give no water at the root for several weeks, merely damping the stage upon which they stand. As the young growths advance a slight sprinkling may be given, but it must be done with discretion, especially before the roots have a firm hold. The young growths will quickly turn black if too much water be given. When properly rooted abundance of water will be required, and at each alternate watering, weak liquid cow-manure will be beneficial. Towards the end of autumn the new bulbs will be nearing maturity, and the foliage turning yellow, when water should be gradually withheld until the flowering season is past. It will then be necessary to thoroughly mature and harden the bulbs, by placing them on a dry shelf close to the roof, in the house in which they were grown, thus giving them all the light possible. Water should be entirely withheld, so that they may start again in the spring with increased vigour.

The stock may be increased by taking off the old back bulbs and inserting them in pots filled with sphagnum moss, putting as many bulbs as possible into each pot. They will soon commence to grow, when they may be re-potted as previously advised. Always endeavour to keep the foliage of Calanthes free from brown scale, by sponging occasionally with soft, soapy

water. When fumigation has to be resorted to for the other inmates of the house, I always take the Calanthes out, as the tips of the leaves often turn black through tobacco smoke. Calanthe Regnieri and varieties nivalis, Sanderiana, Williamsii, and Stevensii will now be in full bloom. They are all deserving of cultivation, and help greatly to prolong the Calanthe season. The flowers show off to the best advantage when the plants are stood on the ground intermixed with ferns. Arranged in this way, the strong, arching spikes have a charming effect.

The rare Eulophia guineensis may also be re-potted now, and should be treated the same as the Calanthes in nearly every respect, except that it requires more shade when growing.

Thunias will now require re-potting. The most convenient way is to plant six or seven bulbs about three inches apart, in a ten-inch pot, which should be half filled with drainage, using loam, peat, and moss in equal proportions. Choose a light position in the hottest house and as close to the roof glass as possible. The successful blooming of these plants depends largely upon the amount of light they get. Each bulb will require a stake to hold it firm. If the bulbs are very long, bend them over and tie them down, by which means the young growths may be brought near to the light. When the growths have started well, and are rooting freely, give abundance of water, and an occasional dose of weak liquid cow manure. Thunias may be easily propagated by taking off the back bulbs, cutting them at the joints into pieces about six or eight inches long, and inserting them as cuttings into a mixture of sphagnum and coarse silver sand.

Both curious and extremely interesting are the genera Mormodes, Catasetum and Cycnoches. Some of the flowers are very sensitive, ejecting their pollen at the slightest touch, others are deliciously scented, and to a keen and intelligent observer the construction of the flowers appears marvellous. Being generally considered difficult plants to preserve in sound condition for any length of time, they have been ignored by many growers. I have experimented with them in several different composts, and have found them to succeed best and last longest when grown in chopped sphagnum well mixed with crock broken up very small. Immediately they commence to grow, they may be shaken out of their old compost and repotted, using well-drained, shallow, hanging pans, the wire of which, being about twelve inches in length, will bring the plants well up to the light. For the next few weeks after re-potting, water very sparingly, then, when the roots have obtained a firm hold, give abundance. The south side of the hottest house will be the most suitable place in which to grow them, but when growth is completed, a drier and more sunny position is required to thoroughly mature and harden the newly made pseudobulbs, a condition essentially necessary for their well being. The resting season should also be prolonged as much as possible. The Mexican house will suit them

admirably during the winter months, where they must be kept comparatively dry, only enough water being given to prevent excessive shrivelling.

Cœlogyne cristata and its pure white variety, hololeuca, are amongst the best winter-flowering Orchids we have, and certainly deserve every care and attention we are capable of bestowing upon them. For cutting and decorative purposes their value cannot be over-estimated. It is now a good time to re-pot any over-grown specimens, or any that require to be broken up and made into smaller plants, using good turfy loam, fibrous peat, and moss, in equal proportions. Unless re-potting be absolutely necessary for these plants, do not disturb their roots in any way, but rather, if in good health, allow them to remain as they are. When growth is in full progress, in no case should they be stinted for water, as anything approaching dryness at the root during this stage of growth will be detrimental to their well doing. C. cristata delights in plenty of light, but not actual sunshine, and the cool end of the Cattleya house is the proper place for it the whole year round.

In large and varied collections the principal work now requiring attention is potting, cleaning, and re-arranging the plants. Before commencing the latter process, the roof glass should be well washed both inside and out. There are many plants that require potting at this season. Those that grow in the hottest houses may be taken in hand first, but if time can be spared, a few of the cool Odontoglossums that require more root room, and those that have just done flowering, may be either re-potted or top-dressed. On no account disturb any Orchid unless absolutely necessary. If there be any suspicion of the soil being in an unsatisfactory condition below, carefully pick it all out down to the drainage, and well wash the crocks with soft tepid water to remove any accumulation of dirt, allowing the roots and crocks to become thoroughly dry before giving fresh material.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

TRICHOPILIA SANGUINOLENTA, Rchb. f.; an interesting species introduced by Hartweg from Ecuador in 1845, and said not to have been since found. It has been cultivated many years at Kew, in the cool house, flowering in winter. The specific name is twice wrongly spelt "sanguinea"; t. 7281.

GARDENERS' CHRONICLE.

CYNORCHIS GRANDIFLORA, Ridl.; the distinct Madagascar terrestrial Orchid noted at p. 59 of our last issue; February 18th, p. 197, fig. 29.

ILLUSTRATION HORTICOLE.

ODONTOGLOSSUM RAMOSISSIMUM, Lindl., VAR. CŒLESTE, L. Lind. and

Rod.; a white and lilac form of this variable species; February 15th, p. 21, t. 170.

GARDENERS' MAGAZINE.

CYCNOCHES PENTADACTYLON, Lindl.; a supplementary plate of the plant described at p. 73 of our present issue; February 11th, p. 77.

REVUE DE L'HORTICULTURE BELGE ET ETRANGERE.

ODONTOGLOSSUM HARRYANUM, Rchb. f.; February 1st, p. 39, with plate.

REVUE HORTICOLE.

CYPRIPEDIUM × ALFRED BLEU; a handsome hybrid raised from C. ciliolare ♀ and C. insigne Chantini ♂, by M. Alfred Bleu, of Paris. It combines well the characters of the parent species, having marbled leaves, a large dorsal sepal lined and spotted with light reddish purple, the petals spotted to near apex with a similar colour, and the lip purple-brown; February 16th, p. 84, with plate.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

AT the meeting of the Orchidéene, of Brussels, held on February 14th, many beautiful and interesting Orchids appeared. The gem of the show was the magnificent Odontoglossum crispum leopardinum exhibited by M. G. Warocqué, to which a First-class Certificate of Merit was unanimously awarded. Lælia × Oweniana, exhibited by M. G. D. Owen, a supposed natural hybrid between L. elegans and L. Perrinii, received a First-class Diploma of Honour. M. Kegeljan received a Cultural Certificate for a fine specimen of Maxillaria triloris with forty flowers, and Messrs. Linden received a similar award for Dendrobium × Ainsworthii, Lycaste gigantea, and Dendrochilum glumaceum. Fourteen Certificates of Merit were awarded, many of them to fine varieties of well-known species. Cypripedium × Claudii and two other new hybrids, which were unnamed, received Diplomas of Honour.

At the Horticultural Meeting at Ghent, held on February 5th, many beautiful plants were exhibited, the following being awarded Certificates of Merit:—Odontoglossum × macrospilum (Rchb. f.), O. × Wilckeanum sulphureum, O. aspersum, O. crispum formosum, O. President Zaldua, Cypripedium × Albertianum, a new hybrid, obtained from C. Spicerianum and C. × vernixium in the collection of M. J. Moens, and Dendrobium nobile nobilior. Cultural Certificates were awarded to Odontoglossum Pescatorei album, Cattleya amethystoglossa, and Cypripedium × Charles Canham, a fine specimen with six magnificent flowers.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By John Weathers.

On February 14, there was a cheerful display of Orchids at the Drill Hall, James Street, Victoria Street, Westminster, when amateurs and tradesmen exhibited in about equal numbers, if not in equal quantities.

The President of the Society, Sir Trevor Lawrence, Bart., Burford, Dorking, sent a few plants, among them being Masdevallia Schrœderiana, and a new hybrid Cypripedium with the name of "conco-Lawre," the result of fertilising C. concolor with the pollen of C. Lawrenceanum. The flowers are creamy white, speckled with rose, and somewhat resemble those of C. × Marshallianum. An Award of Merit was given.

From the Botanic Gardens, Glasnevin, Mr. F. W. Moore, F.R.H.S., sent Diuris maculata, an old but very rare Australian Orchid, with yellow flowers blotched with dark reddish-brown, and Eria barbata, having deep purple stripes on an orange ground, and very hairy ovary. These two Orchids received a Botanical Certificate. From the same collection came the canary-yellow Epidendrum xanthinum and the white-flowered Dendrobium teretifolium, the stems of which are much like those of a Scuticaria.

R. Brooman White, Esq., F.R.H.S., Garelochhead, N.B., sent flowers of Cattleya amethystoglossa under the name of C. Claesiana.

Walter C. Clark, Esq., F.R.H.S., Aigburth Drive, Sefton Park, Liverpool, sent Cypripedium × vernixium (C. villosum aureum ♀ × C. Argus ♂).

C. J. Ingram, Esq., F.R.H.S., Godalming (gr. Mr. Bond), exhibited a plant of Cattleya Trianæ alba.

A Silver Banksian Medal was awarded Gustav R. le Doux, Esq., F.R.H.S., Langton House, East Molesey, for a group of Orchids, among which were Cattleya Trianæ, Florence le Doux, with slightly flushed sepals and petals and a deep crimson lip; Odontoglossum cirrhosum, le Doux var., a form having the segments thickly studded with deep brown blotches; and Cochlioda vulcanica grandiflora, a great improvement on the type by reason of its brilliant flowers. These three plants each received an Award of Merit.

H. Little, Esq., The Barons, Twickenham, sent a hybrid from Cypripedium insigne punctato-violaceum ♀ × C. Spicerianum ♂; a good form of C. × Leeanum, with more purple speckles on the white upper sepal.

The Right Hon. Lord Foley, Ruxley Lodge, Esher (gr. Mr. Miller, F.R.H.S.), contributed several fine plants of Cœlogyne cristata, several Cypripediums and Calanthes, and four well-flowered specimens of Phaius grandifolius, intermixed with other flowering plants.

A small and choice group came from C. J. Lucas, Esq., F.R.H.S., Warnham Court, Horsham (gr. Mr. Duncan). Noticeable were Æonia polystachya (sometimes called Angræcum Kimballianum) and Angræcum hyaloides, with twenty spikes of small pure white blooms; the rosy-flowered Epidendrum elongatum; flowers of Dendrobium Wardianum and its white variety album, as well as a plant of Cattleya Trianæ alba with flowers very much like those of C. Eldorado crocata.

Chas. Winn, Esq., Selly Hill, Birmingham, exhibited Cypripedium × The Duke (C Stonei ♀ × C. barbatum grandiflorum ♂), a highly-coloured flower.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent Cypripedium × Daviesianum (C. Boxalli atratum ♀ × C. Argus Mœnsii ♂).

E. G. Wrigley, Esq., Victoria House, Dunkinfield, also sent Cattleya Trianæ alba.

Mr. James Crispin, F.R.H.S., Chester Park, Fishponds, Bristol, was awarded a Bronze Banksian Medal for a collection of cut Cypripediums representing over two dozen varieties.

Messrs. J. Laing and Sons, Forest Hill, exhibited a slender form of Dendrobium crassinode.

Habenaria cinnabarina, Rolfe, a new species with small orange-red flowers, and a plant of Cynorchis grandiflora were exhibited by Messrs. Lewis and Co., Southgate, N.

Messrs. Hugh Low and Co., Clapton, were awarded a Silver Flora Medal for a group in which healthy Phalænopsis grown in baskets and cylinders, Platyclinis glumacea, and Saccolabium bellinum formed the chief attraction. The rare Phalænopsis Schilleriana vestalis, Rchb. f., with white substantial flowers, received a First-class Certificate.

On this occasion Messrs. Paul and Son, of Cheshunt, entered the Orchid lists with a large group of Cœlogne cristata, such varieties as alba, maxima, Chatsworth var., Lemoniana, &c., being represented, while one plant of alba bore a seed-pod which was well advanced towards maturity.

Messrs. Pitcher and Manda, Hextable, Swanley, received a Silver Banksian Medal for a large group of well-flowered Cypripediums, Cattleyas, Lælias, Odontoglossums, Oncidiums and Dendrobiums.

Messrs. F. Ross and Co., Merstham, exhibited a strong plant, bearing six large flowers of Cymbidium grandiflorum, which was accorded a First-class Certificate. The segments are pale green, striped with reddish-brown, the lip being white spotted with brown.

A Silver Flora Medal was the award to Messrs. F. Sander and Co., St. Albans, for a select group, in which were the Mexican Arpophyllum spicatum with a dense erect spike of rosy-purple flowers; Dendrobium × Owenianum (D. Linawianum ♀ × D. Wardianum ♂), a very fine hybrid

raised in the collection of Norman C. Cookson, Esq., F.R.H.S., of Wylam-on-Tyne (*vide* p. 86). D. nobile Amesiæ received an Award of Merit. It has creamy-white sepals and petals, and a deep wine-red throat. Lælio-cattleya Maynardii (L. pumila Dayana ♀ × C. dolosa ♂) also received an Award of Merit. The flowers have very much the shape of those of L. × claptonensis (L. × elegans ♀ × Cattleya Dormamiana ♂), but are quite distinct in colour, being deep purple with a much darker lip. Dendrobium × Sanderæ (D. nobile albiflorum ♀ × D. heterocarpum ♂) with creamy-white flowers, several plants of Cypripedium Exul, and varieties of Lycaste Skinnerii, were also in the group.

Mr. H. A. Tracy, F.R.H.S., Amyand Park, Twickenham, exhibited a fine strong Cypripedium × Lathamianum, which differed somewhat from the ordinary forms in having a green instead of brownish-purple peduncle.

Messrs. J. Veitch and Sons, King's Road, Chelsea, contributed, as usual, several interesting novelties in the way of hybrids raised by Mr. Seden. Phaius × amabilis (P. grandifolius ♀ × P. tuberculosus ♂) is a distinct hybrid which received a First-class Certificate (*vide* p. 87); Cypripedium × Winnianum (C. villosum ♀ × C. Druryi ♂) was considered worthy of an Award of Merit. The flowers are fairly intermediate between the parents, the prevailing colour being a soft light brown. Epidendrum × Endresio-Wallisii was also shown.

Mr. W. Whiteley, F.R.H.S., Hillingdon, Uxbridge, exhibited Cattleya Trianæ Hillingdon var. which received an Award of Merit. The sepals and petals are deep rose, the large lip being an intense purple.

To Messrs. B. S. Williams and Son, Upper Holloway, a Silver Flora Medal was awarded for a large group of over fifty plants, among which were a distinct form of the white Cattleya Trianæ, several Cypripediums, including C. × Morganiæ, C. × Sallieri, C. × Amesianum, C. × Cythera (C. Spiceri-anum ♀ × C. purpuratun ♂); Gomeza planifolia, Ada aurantiaca, Miltonia Roezlii, Odontoglossum blandum, Lælia harpophylla, Lycaste costata, Oncidium splendidum, and others.

REPLIES TO CORRESPONDENTS.

W. G. M., Taunton.—An unusually small form of Cypripedium Stonei.

H. J. R., Florence.—Lælia anceps Sanderiana.

J. P., Puddletown.—A new hybrid; next month.

H. W. N., Leek.—Many thanks for photograph; next month, if possible.

H. L. & Co., Clapton.—The Stanhopea unavoidably stands over.

H. J. H., Edinburgh.—Photograph received, with thanks; it would have been more suitable if taken as an isolated specimen.

F. J. P., Windsor.—Probably a new hybrid.

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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THE ORCHID REVIEW.

VOL. I.] *APRIL*, 1893. [No. 4.

NOTES.

Two meetings of the Royal Horticultural Society will be held during April, on the 11th and 25th, respectively, at the Drill Hall, James' Street, Victoria Street, Westminster, when the Orchid Committee will meet at 12 o'clock, noon. The afternoon lecture on the former date will be given by Mr. Everard F. im Thurn, at 3 p.m., the subject being "Orchid Life in Guiana."

The subject is an attractive one, and as the lecturer has a practical knowledge of the subject, being in fact celebrated for his successful ascent of Mount Roraima a few years ago, a very interesting lecture may be anticipated.

Information of this kind is frequently difficult to obtain, as commercial considerations seem to require that collectors of Orchids should work as far as possible in secret, and the information which comes to hand is not always of the most profitable kind. We are, therefore, the more inclined to welcome such a lecture as the one just mentioned.

The event of the month is undoubtedly the great Quinquennial International Exhibition at Ghent, which opens on the 16th, and closes a week later. As pointed out in our February issue, seventy-four classes are set apart for Orchids, with several prizes in each. These include collections and single specimens of all the important garden genera, also for collections of cut flowers. We believe that several of our British nurserymen will be represented.

We observe in two recent publications a hybrid Cypripedium, to which the name of C. × memoria Moensii has been given, in memory of the late

M. J. Moens, of Lede, the raiser. But this is an innovation which we hope not to see repeated. The second name is presumably given to prevent confusion with the plant formerly called C. Moensii, which is only a variety of C. Argus, and now known under its proper name of C. Argus Moensii.

Numerous plants have been named in memory of persons deceased, and a little extension of the above system would lead to some rather curious developments. Unfortunately, we have already a parallel instance, which will at least serve to point a moral.

We have Cypripedium hybridum, C. hybridum Eyermanianum, C. hybridum Pollettianum, C. hybridum Youngianum, and several others, which, to the uninitiated, would appear to indicate that C. hybridum was rather variable, and had several varieties, just as we have C. × Leeanum, C. × Leeanum superbum, C. × Leeanum giganteum, and others: or Cattleya hybrida and C. hybrida picta. Nothing of the kind, however, is intended.

It has been found desirable to adopt some means of distinguishing hybrids from species. A botanical rule required that a hybrid should receive the name of its two parents, as Cypripedium Fairieano-barbatum for C. × vexillarium—a method not viewed with much favour by horticulturists, and moreover hardly applicable to those of unknown parentage, and to secondary hybrids. A shorter method, and one more generally followed, is the use of the sign "×," to indicate a plant of hybrid origin, though some prefer to prefix the word "hybridum" in the same sense. The result we have just pointed out, and similar examples could be culled from other genera.

Sometimes the word hybridum is placed in brackets thus—"(hybridum)," when it is not open to the same objection, though far more cumbrous than the simple "×," which means the same thing, and is not liable to misconstruction.

The truth is, the nomenclature of hybrids is sufficiently difficult. They are apt to be rather variable; sometimes even from the same seed-pod, and it may yet be necessary to distinguish a variety of C. × memoria Moensii, though we rather shudder at the thought of further extension. We therefore suggest that the hybrid in question be called simply C. × Moensii.

A number of the *Kew Bulletin* which has just been issued, in the form of an Appendix, is devoted to the New Garden Plants of 1892, and, as might be expected, includes many Orchids.

THE HISTORY OF ORCHID HYBRIDISATION.

PART IV.

(*Continued from page* 71.)

FOR a quarter of a century English hybridists completely monopolised the field; but in 1881 a French hybrid appeared. In the *Revue Horticole* for that year (p. 346), the flowering of two unnamed seedling Cattleyas is recorded by M. Bergman. They were raised by M. Alfred Bleu, of Paris, from C. intermedia crossed with the pollen of C. Aclandiæ. This hybrid, which is a decidedly handsome one, afterwards received the name of C. × calummata.

Here we may remark that, although we have hitherto attempted to give a complete list of the various hybrids raised, and as nearly as possible in the order of their appearance, so far as existing records and published descriptions permitted, it is not intended to follow this method throughout. In the early history of the subject this was important; but we may now content ourselves with recording the more important hybrids, leaving some of the others until we come to consider the various genera separately. Owing to their increasing number and irregular publication, a strictly chronological arrangement is impossible, though this method will be followed as far as possible.

One important hybrid which was previously overlooked must here be mentioned, namely, Cypripedium × selligerum, the first cross from C. philippinense. It was raised in the collection of Messrs. James Veitch and Sons, of Chelsea, and was figured and described in their catalogue for 1878. C. barbatum was the seed parent. It is a stately plant, and partakes largely of the racemose character of the pollen parent.

The year 1881 may be said to have witnessed the completion of a quarter of a century's work in this interesting field, as it was just twenty-five years prior to this date that Calanthe × Dominii flowered for the first time. The next decade witnessed some striking developments, as will hereafter be seen.

During 1882 several interesting hybrids appeared, the most noteworthy being Lælia callistoglossa, Cypripedium × microchilum, Selenipedium × cardinale and Masdevallia × Fraseri, the last-named being the work of a new operator.

The first-named was a plant of sterling merit, and a great acquisition. It was obtained by crossing Lælia purpurata with the pollen of Cattleya Warscewiczii, and was described under the name of Lælia × callistoglossa. Mr. Seden was the raiser. The flower of this hybrid is exceptionally large, and the lip very richly coloured. It is perhaps unequalled, and certainly unsurpassed, at the present time.

Cypripedium × microchilum is a distinct and charming little plant, obtained by Mr. Seden by crossing C. niveum with the pollen of C. Druryi, neither of which species had before been used by the hybridist. The plant bears the most unmistakable evidence of its origin. It has the general character of C. niveum, though both leaves and flowers are modified in shape, and the dark median band of the dorsal sepal and petals of the pollen parent is conspicuously present in the hybrid.

Masdevallia × Fraseri, the second hybrid in the genus, was raised in the collection of Mr. Fraser, of Derncleugh, near Aberdeen, from M. ignea and M. coccinea (afterwards called M. Lindeni), the former being recorded as the seed parent. It is a bright and attractive hybrid, showing a distinct combination of characters derived from the two parent species.

Cypripedium × Williamsianum was raised in the collection of Robert Warner, Esq., of Broomfield, near Chelmsford, and was dedicated to the late Mr. B. S. Williams, of Holloway. Its parents were C. villosum and C. venustum.

Dendrobium × Leechianum was raised by Mr. W. Swan, in the collection of W. Leech, Esq., of Fallowfield, near Manchester, from D. aureum crossed with the pollen of D. nobile. Thus it has the reversed parentage of D. × Ainsworthii and D. × splendidissimum. It is a handsome form, much resembling the last-named one.

Selenipedium × cardinale was obtained by crossing S. × Sedeni with the pollen of S. Schlimii albiflorum. Mr. Seden was the raiser. It is a very handsome hybrid; the rose-coloured lip contrasts effectively with the nearly pure white segments. A figure is given in our last issue, p. 81, fig. 5.

Cypripedium × macropterum is a stately hybrid raised from C. Lowii ♀ and C. superbiens ♂. Like the preceding, it was raised in the establishment of Messrs. James Veitch and Sons, at Chelsea. It is said to be one of the comparatively few hybrids in which the characters of the seed parent predominate in the flower, and those of the pollen parent in the foliage.

The hybrids of 1883 were not numerous; but three very interesting ones were described—namely, Calanthe × lentiginosa, Selenipedium × Schrœderæ, and Cattleya × triophthalma, all of which were raised in the Royal Exotic Nursery.

Calanthe × lentiginosa was the first cross from C. labrosa, a Burmese species described only four years previously. C. × Veitchii was the pollen parent. It is a very pretty hybrid, with white flowers, the sepals and petals flushed with pale rose, and the base of the lip spotted with bright rose. Some darker varieties afterwards appeared.

Selenipedium × Schrœderæ was the result of crossing S. caudatum with the pollen of S. × Sedeni. It is one of the finest hybrids in the genus, being both robust and floriferous, while the flowers are large, well-shaped,

and very richly coloured. It was dedicated to Baroness Schröder, of The Dell, Egham.

The hybrid to which the name of Cattleya × triophthalma was given is a beautiful and singularly distinct one. It was obtained from Cattleya superba, crossed with the pollen of Lælia × exoniensis, and flowered for the first time when eight years old. Two plants only were raised, which are now in the collections of Baron Sir Henry Schröder and the Hon. F. L. Ames, respectively.

During 1884 at least half a dozen handsome novelties flowered, five of them at the Royal Exotic Nursery, the other in the collection of Sir Trevor Lawrence, Bart., M.P., who now entered the lists for the first time.

Calanthe × porphyrea was the first hybrid which flowered in the Burford collection. C. vestita rubro-oculata is said to have been the seed parent, and C. labrosa the pollen parent. It is one of the handsomest of hybrid Calanthes, and the colours are surprising brilliant, considering its parentage, if that has been correctly recorded.

Cypripedium × Leeanum was a great acquisition, and the first hybrid from C. Spicerianum, described five years previously. C. insigne Maulei was the seed parent. It was raised by Mr. Seden, and was dedicated to W. Lee, Esq., of Leatherhead, then the possessor of a very fine collection of Orchids. Singularly enough the name has since been transferred to an inferior form, raised from the ordinary form of C. insigne, while the original hybrid has been called C. × Leeanum superbum.

Lælia × Amesiana was a handsome hybrid raised by Mr. Seden from Lælia crispa fertilised with the pollen of Cattleya maxima. It was dedicated to the Hon. F. L. Ames, of North Easton, Mass., U.S.A. It is a very handsome hybrid, in which the characters of the seed parent somewhat preponderate.

Lælia × bella was obtained by crossing L. purpurata with the pollen of the old autumn-flowering Cattleya labiata. It was raised by Mr. Seden, but is recorded as having first flowered in Baron Schröder's collection. It is a richly coloured and very handsome hybrid.

Cypripedium × porphyrochlamys was derived from C. barbatum Warnerianum crossed with the pollen of C. hirsutissimum, and thus was the first hybrid derived from the latter. It is an exceedingly handsome hybrid, and was named in allusion to its brilliant purple-crimson colour. Mr. Seden was the raiser. It is figured in our present issue, p. 105, fig. 7.

Masdevallia × Gairiana, which next appeared, was derived from M. Veitchiana crossed with the pollen of M. Davisii, a handsome yellow-flowered species not previously used by the hybridist. Mr. Seden was the raiser, and the plant was named after Mr. John Gair, of Falkirk. It is a handsome hybrid with orange-yellow flowers studded with violet papillæ.

In 1885 the occurrence of three more Continental hybrids was recorded

by M. Bergman, all of them belonging to the genus Cypripedium, but only one representing a new combination.

The first of these was raised by M. Bauer, of Paris, between Cypripedium insigne Chantini and C. barbatum. It was called C. × Laforcadei, but strictly speaking must be ranked as a variety of C. × Ashburtoniæ, raised by Mr. Cross from the same two species.

The second was raised by M. Alfred Bleu, of Paris, between C. superbiens and C. javanicum, the latter species not having been previously utilised by the hybridist. This hybrid, then unnamed, was afterwards called C. × javanico-superbiens.

The third, C. × Sallieri, was raised by M. Godefroy Lebeuf, of Argenteuil, its parents being C. villosum and C. insigne. Thus it must be ranked as a variety of C. × nitens raised by Mr. Seden from the same two species.

One other Cypripedium was also recorded in another work, namely, C. × Dauthieri. It was described as the first Continental hybrid, but the raiser is not stated, nor yet when it flowered for the first time. It is, however, only a variety of C. × Harrisianum.

The English hybrids of 1885 all appear to have been raised in the establishment of Messrs. Veitch, of Chelsea.

The first one recorded was Dendrobium × euosmum, the earliest secondary hybrid in the genus. It was derived from D. × endocharis and D. nobile, the former, itself a hybrid, being the seed parent. It is a very charming hybrid, its flowers being white with a deep maroon-purple disc, and deliciously fragrant.

The next was a Selenipedium, derived from S. Roezlii and S. Schlimii albiflorum, the latter being the pollen parent. It was described as Cypripedium × leucorrhodum. As the seed parent is scarcely more than a geographical variety of S. longifolium, the present hybrid may be classed as a handsome variety of S. × Sedeni.

Zygopetalum × pentachromum is said to have been obtained from *Z.* Mackayi ♀ and *Z.* maxillare ♂, and to have the inverted parentage of *Z.* × Sedeni, of which it may rank as a variety. The seed is said to have been sown in 1876.

Lælia × Canhamiana is said to have been derived from Lælia purpurata and Cattleya Mossiæ, and to have flowered for the first time when thirteen years old. It is a very handsome hybrid, and was dedicated to Mr. Canham, one of the Orchid foremen at the Royal Exotic Nursery.

Cypripedium × radiosum, the first C. Lawrenceanum cross, was obtained by crossing this species with the pollen of C. Spicerianum. It presents a distinct combination of the characters of the two parent species. Reichenbach's remark that it was "a cross between the natural species and the Sedenian-raised Orchid" is inexplicable, as he records the parentage above given.

Cattleya × porphyrophlebia, with which we complete our record for the year, was the result of crossing C. intermedia with the pollen of C. superba. Reichenbach states that it flowered for the first time when four years old, an unusually short period for a Cattleya, if the record is correct. It derived its name from the handsome purple veining of the lip. The characters of the seed parent decidedly preponderate in this hybrid, the colour especially resembling that of C. intermedia.

(*To be continued.*)

CYPRIPEDIUM SPECTABILE.

This handsome North American species does not succeed everywhere, and probably many more people would grow it but for this difficulty. It is a bog plant, and is abundant in many of the peat bogs of Canada and the N. E. United States, and what is particularly interesting is that it has recently been discovered on the borders of China and Tibet. Mr. Field, of Stanley Hall Gardens, Bridgenorth, has recorded in *The Garden* for March 11th, p. 192, his success in cultivating it. Selecting a border sheltered on the west by a high yew hedge, he removed the soil to a depth of eighteen inches, refilling with a compost of loam, leaf mould, broken potsherds, and coarse silver sand, and then planted the roots firmly, but not deeply, and when rooted gave them a good soaking with water. This was repeated two or three times during the growing season. A light fence three feet high was also erected on the east side. Thus treated they increase in size and flower admirably. It is not too late for those who wish to make the experiment. The essentials are suitable soil, moderate shade, and plenty of water at the root.

SCHOMBURGKIA ROSEA.

Although described nearly half a century ago, this handsome New Granadan Schomburgkia does not appear to have been introduced to cultivation until quite recently. Last year, however, it flowered with Messrs. B. S. Williams and Son, of Upper Holloway, and in February last with H. J. Ross, Esq., of Florence. It is the nearest ally of S. undulata, but has rather smaller flowers, which are more uniform in colour. The sepals and petals are very undulate, dull reddish purple in colour, and the lip purple-rose, with three undulate white keels on the disc. The column is densely spotted with minute dusky purple dots on a pale ground. Like S. undulata, the flowers and bracts are crowded at the apex of the peduncles. By the way, has any one tried crossing this genus with any of the large-flowered Cattleyas? It might yield some interesting results.

EPIDENDRUM × ENDRESIO-WALLISII.

It was a rather happy idea of Mr. Seden to cross Epidendrum Wallisii with the pollen of the elegant little E. Endresii, as the resulting hybrid has now proved. It is a charming little plant, and when exhibited at a meeting of the Royal Horticultural Society on January 12, 1892, was awarded a First-class Certificate. It has now proved to be rather variable, as Messrs. Veitch have sent us flowers from four different plants, all of which are different. The first has the sepals and petals suffused and dotted with maroon, and the four-lobed lip light yellowish white, irregularly blotched and veined with dull purple, and the crest orange. The second has the flowers a little smaller, the sepals and petals darker except at the base which is pallid, and the lip almost suffused with light purple, and veined with darker purple on the disc. The third has the sepals and petals light yellow at the base, and light purple above, and the lip very similar to the preceding. In the fourth the lower half of the sepals and petals is yellowish white, and the upper part suffused and spotted with light purple; the lip is also suffused with this colour, but scarcely at all veined. The purple of the sepals and petals of this hybrid is a curious feature, as the pollen parent has these organs white, while the mother plant has them yellow spotted with very dark maroon-purple. To account for the peculiarity we may assume that in the hybrid the colouring pigment of the spots has become suffused through the segments. The flowers are nearly an inch in diameter, and when the plants become stronger they will probably improve. In habit the two parents are widely diverse, and an intermediate form should be a decided improvement. This pretty hybrid appears to be very floriferous.

ODONTOGLOSSUM CERVANTESII PUNCTATISSIMUM.

This rare and handsome variety has just flowered in the collection of Capt. H. P. Greenwood, F.L.S., Harnham Cliff, Salisbury. It has the flowers lightly flushed with pink, and above the usual brown spots are numerous other rosy purple ones, which extend to the summit of all the segments. It has the toothed lip of the variety decorum.

Odontoglossum Cervantesii punctatissimum, Rchb. f. in *Gard. Chron.*, 1878, ii. p. 537

CYPRIPEDIUM × PORPHYROCHLAMYS.

THE magnificent hybrid whose portrait we now present to our readers was obtained by Mr. Seden, in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Cypripedium barbatum Warnerianum crossed with the pollen of C. hirsutissimum, and was the first hybrid in whose

Fig. 7. CYPRIPEDIUM × PORPHYROCHLAMYS.

parentage the last-named species had participated. It flowered for the first time in 1884.

The leaves are less distinctly tessellated than those of the seed parent, but in the shape of the flower the influence of the pollen parent greatly

preponderates. The prevailing colour is deep crimson-purple, which is suffused through a considerable part of the flower. The upper sepal has a white margin and some dark veins on the disc. The petals are light yellowish-green at the base, dotted with minute blackish warts, the remainder being glossy crimson-purple. The lip is brownish-purple in front, inclining to greenish behind, and the staminode brownish-purple. We believe it is also very rare.

C. × Fraseri is a very similar form, and was probably derived from the same two species, though, according to existing records, from the reversed parentage.

The colouration of this hybrid is somewhat peculiar, and very attractive. It evidently arises from the union of the diverse colour-pigments of the two species. That it is of no mere accidental character is evident, as the same peculiarity is seen in C. × Castleanum, derived from C. hirsutissimum and C. superbiens. It would therefore be a very promising experiment to cross C. hirsutissimum with C. Lawrenceanum, C. Curtisii, and some other species of the tessellated-leaved group. We commend the experiment to our readers.

The photograph here reproduced was taken from a flower kindly sent by Baron Sir Henry Schröder, of The Dell, Egham.

Cypripedium × porphyrochlamys, Rchb. f. in *Gard. Chron.*, 1884, i., p. 476; *Veitch Man. Orch.*, iv., p. 96; *Orchid Album*, ix., t. 426.

A CURIOUS CYPRIPEDIUM BOXALLII.

A very curious specimen of Cypripedium Boxallii has been sent to us by H. J. Ross, Esq., of Florence, in which the scape is two-flowered and the lowermost bract developed into a normal leaf over eight and a half inches long. It affords a capital illustration of the well-known fact that the peduncle is only an elongated portion of the axis, and the bract only a modified leaf. Were it not for the elongated scape below the leaf some might consider it an example of an additional sessile flower in the axil of the leaf, as the stalk of the uppermost flower is three and a half inches long. The flowers are quite normal in character. When the specimen was sent the uppermost flower was only a bud, but the scape being placed in water in an ordinary room, this bud ultimately expanded precisely as it would have done if left on the plant, which fact shows the value of the leaf as a food-supply. These abnormal developments are apt to be very instructive.

THE HIGHBURY COLLECTION.

To any one who contemplates forming a collection of Orchids, the wealth of materials to select from must sometimes prove rather embarrassing. There is abundant scope for individual tastes to come into play, and consequently not the remotest possibility of one dead level of uniformity being reached. The truth of these propositions is well illustrated in the three collections which have been described in our preceding numbers, and in some respects will be further emphasised to-day.

The collection brought together by the Right Hon. J. Chamberlain, M.P., at his residence, Highbury, Moor Green, near Birmingham, is a very extensive, and at the same time a very select one. Much care and forethought has been expended upon it, and with the most satisfactory results. Mr. Chamberlain, as is well known, takes a special interest in this handsome family. He is a collector of the best varieties of the most beautiful species, or those most useful as decorative plants; and, further, has an intimate knowledge of the history of individual specimens, and of the various expedients which in some cases had to be resorted to before they could be induced to grow and flower satisfactorily.

Thirteen houses are devoted to Orchids. These, with some others, together with a lofty conservatory, are connected by a corridor, which extends from the dwelling, and the whole block of buildings is so arranged that any part of it may be visited without going into the open air. The principal houses are fitted with electric lighting apparatus, and when used the effect is said to be very charming.

The Orchids are under the care of Mr. H. A. Burberry, on whom they reflect great credit, being well cultivated generally, and in excellent health. Many rarities are represented in the collection, and some of these will be pointed out as we proceed.

In the corridor is a fine strong plant of the tall Sobralia Cattleya, which grows well, but, as at Burford, cannot be induced to flower. Some day, perhaps, the shy beauty may be induced to unfold her charms—for we are assured it is a beautiful thing, and less fugacious than many others—but the secret of success has yet to be learnt. Perhaps we do not yet understand sufficiently the conditions under which the plant grows in its native habitat.

The Cattleya house contains a superb collection of Cattleyas and Lælias, including many varieties of great merit, and all in the most vigorous health. Cattleya Gaskelliana albens and C. Mossiæ Wageneri are in the collection, also fine plants of C. Trianæ alba, and other white Cattleyas. The unique C. Gaskelliana picta is a handsome thing, with the sepals and petals regularly striped or flamed along the centre with a deeper shade of colour, as in the case of C. Mossiæ Hardyana. The beautiful Cattleya

labiata is well represented, thanks to its re-introduction; which is certainly one of the most important horticultural events of recent years. The fragrant and beautiful C. Schrœderæ and C. Bowringiana succeed admirably, while the commoner forms of the labiata section are, of course, grown in quantity and with great success.

Among natural hybrids we may note the rare C. × sororia, also C. × Brymeriana, and of garden hybrids numerous examples, among which the rare Veitchian C. × Chamberlainiana cannot be overlooked, also the beautiful Lælio-cattleya × exoniensis. In fact hybrids generally are well represented. Several promising seedlings have been raised in the collection, from which good things are expected. One of these is a particularly interesting cross between Lælia cinnabarina and Cattleya Lawrenceana. Suspended from the roof in this house are some healthy Comparettias, also Sarcochilus Hartmanni, and other dwarf species, which succeed well.

The Phalænopsis house, which is double glazed, contains a fine collection of healthy plants, with large leaves and an abundance of roots. The bulk of the plants consist of P. Schilleriana and P. Aphrodite, but many other species are represented, and succeed equally well. They also flower in profusion, which indicates pretty clearly that they appreciate the treatment given.

In the next division, among other things, is a fine batch of Angræcum Sanderianum, which flowers very profusely and is a great favourite. Aërides Lawrenceæ also, and Miltonia Roezlii succeed well in this house.

In the intermediate house a nice batch of the beautiful Vanda cœrulea is grown, in company with the Dendrobiums, and receives the same treatment both during the growing and resting season. Species of Chysis, Mormodes, Catasetum, and other genera, also cultivated in this house, show that curious species are not altogether neglected. A fine batch of Odontoglossum grande, good plants of Cattleya maxima and Oncidium incurvum are also included, together with Lælia pumila and its varieties, Oncidium Forbesii, Cattleya × Dominiana, a charming hybrid between C. intermedia and C. superba, Dendrobium formosum, and others.

The cool Odontoglossum house contains a fine collection of very healthy plants, among which are many superb forms of O. crispum, which is a great favourite. A rigid process of selection, however, is carried out, and only the best forms are retained. O. Pescatorei and numerous other species are also well represented, together with a number of the beautiful natural hybrids so common in this genus. The smaller species are grown in pans suspended from the roof, and include O. Rossii, O. Cervantesii, and their varieties, also several of the allied species, and a number of healthy plants of the charming scarlet-flowered Cochlioda Noezliana, one of the prettiest of recent introductions in this group.

The Mexican house contains a magnificent collection of the varieties of

Lælia anceps, which it would be difficult to surpass throughout the country. One called L. anceps highburiensis is the darkest of the coloured forms, while the one with the largest flower and most perfect shape is L. anceps grandiflora, a really splendid form. The numerous white varieties here flower very freely. A good batch of the pretty L. flava and another of L. harpophylla are grown, and when in flower are very showy. The pretty hybrid L. × flammea is also noticeable, on account of the peculiar colour of its flowers. Lælia Gouldiana and several other interesting forms are also included.

In the next house a splendid collection of Miltonia vexillaria is grown, and particularly well grown too. This species is also a great favourite. Its variability is well known, and as might be expected, some very handsome forms are in the collection. Cœlogyne cristata and its varieties, and some of the smaller Cattleyas are also grown here.

Then comes a house in which the Lycastes are grown, also Oncidium tigrinum and a superb collection of the beautiful Odontoglossum citrosmum, which is grown to perfection. Many other interesting things might be enumerated.

The Masdevallias have a snug little house all to themselves, and the showy species are represented in force. M. coccinea in its multitudinous varieties, the beautiful yellow M. Davisii, the scarlet M. ignea, and the chaste and fairy-like M. tovarensis are great favourites, while the smaller species also are represented by healthy examples.

Dendrobiums are special favourites, and all the best kinds, both species and hybrids, are represented, some of them in quantity, consequently a large amount of space is given to this most useful genus. One house contains the bulk of the deciduous or semi-deciduous species, which require similar treatment, while those which require more heat, as D. Phalænopsis, D. bigibbum, D. superbiens, and allies are placed in another house, where they grow with the greatest freedom and flower in profusion. Many of the Dendrobiums grow with unusual vigour, as D. Wardianum and the varieties of D. nobile, also some of the hybrids, as D. × Ainsworthii, D. × Leechianum, D. × Cassiope, and D. × Venus, which latter are plants of the easiest possible culture, exceedingly floriferous, and of the greatest possible decorative value. When in flower some of these plants are a perfect picture of loveliness.

A few of the Cattleyas require rather more sun and heat than the others, and these are kept apart from the general collection, and less shading used. These are C. Warscewiczii and C. Dowiana, with the beautiful natural hybrids between them, as C. × Hardyana and its variety Massaiana, also C. Warneri, C. Percivaliana, C. Lawrenceana, and a few others. Being thus kept apart, their wants are the more easily looked after. Other plants which require similar treatment also find a home here.

One group which in many collections occupies a very prominent position has yet to be mentioned, namely, the Cypripediums. They are not unrepresented, it is true, but their number is comparatively small. The fact is the majority of them are not liked. Those which vary a little from the stiff and formal shape, and from the endless mixtures of green and brown so common in the genus, find a place. There is a nice batch of plants of the niveum section, as C. niveum and C. bellatulum; C. Stonei also is included. The remarkable New Guinea species, C. Chamberlainianum, which was named after Mr. Chamberlain, is also appropriately represented by one of the best pieces imported. Selenipedium Schlimii, as well as S. × Sedeni and its pretty varieties, are also among the few that find favour with Mr. Chamberlain.

A multitude of names could be added to the account of this choice and valuable collection, but a mere catalogue would only be wearisome. Many of the species are grown in quantity, and poor forms are not allowed to remain. The Dendrobiums, Odontoglossums, Cattleyas and Lælias, and the Phalænopses are the pride of the collection, and most of the other things which are included are of a decidedly showy character.

DENDROBIUM × BARBATULO-CHLOROPS.

Natural hybrids in the genus Dendrobium are by no means common. The best known example is D. × crassinodi-Wardianum, whose intermediate character is unmistakable. Two or three others have been reported, but these are, to say the least, doubtful. Last year, however, a second example came to light, in the collection of Major-General E. S. Berkeley, Spetchley, Bitterne Park, Southampton, and the plant is again flowering with him. It is a natural hybrid between D. barbatulum and D. chlorops, which species grow together in hundreds in the Deccan Peninsula, S. India. It has an unmistakable combination of the characters of the two parent species. The flowers are white, much like those of D. barbatulum, with a similar acute spur, but the side lobes of the lip are wholly green, as in D. chlorops, instead of being lined with purple, as in the other species. The hairy disc most resembles that of D. barbatulum. It is a very interesting plant.

Dendrobium × barbatulo-chlorops, Rolfe in *Gard. Chron.*, 1892, i. p. 298.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 83.)

There is a group of Dendrobiums commonly found both in the plains and on the hills, very extensively distributed throughout Northern India, Assam, and Burma, from latitude 10° N. to 27° N. Of these probably the most common is Dendrobium Pierardii. This plant is found in the lower ranges of the Himalayas, on the mangrove trees in the hot swamps of the Sounderbunds, in Assam, and universally throughout Burma.

As might be expected, under such various conditions of growth, there is a great difference, not only in the size and quality of the flowers, but also as to varieties of easy growth in our home Orchid houses. The varieties growing in the hot plains are not only miserable both as regards the quality of both plants and flowers, but being accustomed to great heat, do not accommodate themselves to the different conditions of our houses in England. The varieties growing in the ranges of the Himalayas below Darjeeling, and in the various hill ranges throughout Assam and Burma, are very good, both in strength of growth and freedom of flowering, and are much more easy of cultivation. The best varieties can be distinguished when out of flower by their stems, which are both longer and stouter than those of the low country form.

D. Pierardii is generally found growing on the stems and branches of trees, frequently in company with D. Parishii, to which plant the same remarks regarding the quality of the flowers are applicable. The low country variety of D. Parishii is generally very poor, the plants stunted and the flowers small; whereas the immense bulbs of the hill variety, which was called by the late Professor Reichenbach "Dives," give a wealth of extremely fine flowers and is certainly a very showy Orchid.

In consequence of certain plants collected with D. Pierardii and D. Parishii turning out intermediate between the two, Reichenbach considered that they might be considered natural hybrids.

The first one that made its appearance was that found by Mr. Boxall in 1874. This plant was named D. rhodopterygium, Rchb. f. The stems of this plant are erect in habit, and smooth, as in many of the varieties of Pierardii. The flowers are attractive and of pleasing colour, with a slight white band round the edge of the lip.

The other plant, called by Reichenbach D. polyphlœbium, has more the appearance of D. Parishii var. Dives. The stems are long and drooping, not erect and smooth, as in D. rhodopterygium, and the old stems are covered with loose sheaths, in the same way as is often the case with D.

Parishii. The plant is also much freer in growth and more floriferous. The lip is larger and has a broader white band round it. Especially is this the case in one of the forms which Reichenbach calls D. polyphlœbium var. Emericii. D. polyphlœbium was found by me on four different occasions growing with D. Pierardii.

No doubt the flowers of D. rhodopterygium and D. polyphlœbium are very similar, and the view generally accepted is that they are both natural hybrids between D. Pierardii and D. Parishii. As so many hybrids are now making their appearance in England, it is to be hoped that this surmise will soon be capable of proof.

The same remarks regarding the effect of hot and dry plains on members of this group are equally applicable to D. cretaceum, D. primulinum, and D. crepidatum.

The variety of D. cretaceum found in the neighbourhood of Rangoon is miserable, and not worth growing, but if the plants be collected in the valleys of the low-lying hills some eighty miles distant, they will be charming, and good enough to please any one. By far the most beautiful variety of this plant is found in the Andaman Islands, where, in consequence of the great rainfall, the plant grows with great luxuriance, and bears an abundance of flowers. This Andaman variety is also deliciously sweet-scented.

D. primulinum giganteum, the mountain form of D. primulinum, is unquestionably the best, having broad sepals and petals, the great objection to the common form being the great narrowness of these parts of the flower.

D. crepidatum of Rangoon is absolutely worthless. The flowers of this plant do not open properly, but form numerous seed-pods, and as far as my judgment goes are self-fertilising. The form which grows in the hills is a pretty thing and free flowering.

There are probably good varieties and bad varieties of all Orchids; it seems clear, however, that the best varieties are found where there is the shortest season of drought and where plants are sheltered from hot, drying winds.

(*To be continued.*)

LYCASTE SKINNERI ALBA.

ABOUT thirty years ago a writer in the *Gardeners' Chronicle*, remarked that Lycaste Skinneri seemed about to have as great a future as the tulip. If the prophecy has not been fulfilled to the letter, we can at least say that in the majority of collections it is highly valued as a winter-flowering decorative plant. Some there are who regard it with little favour, while others, and especially those who understand its requirements, grow it in considerable numbers.

The species is a native of Guatemala, and was originally discovered by Mr. Skinner, probably in 1839, as it was first described in the following

Fig. 8. LYCASTE SKINNERI ALBA.

year, under the name of Maxillaria Skinneri. The collector sent home living plants, which flowered early in 1842, when a figure was published in the *Botanical Register* by Dr. Lindley. Soon after its discovery by Mr. Skinner it was met with by M. J. Linden, who also sent home living plants.

It varies in colour from deep rose to white with a faint stain of yellow on the lip, and about a dozen varieties have received distinctive names. The variety alba, of which we here give an illustration, appeared among the first importations, and has ever since been regarded as a chaste and very beautiful form. In every other respect but that of colour it resembles the typical form. The photograph here reproduced was kindly sent us by H. W. Nixon, Esq., of Leek, Staffordshire.

Lycaste Skinneri is a plant of very easy culture, and may be propagated by division after flowering. They should be grown in peat, in well-drained pots, and grown at the warmest end of the house, or in an intermediate house, and during the growing season should be liberally supplied with water. Even when at rest the compost should not be allowed to become dry. It is very floriferous, and large, well-grown plants will produce as many as fifty flowers, producing a handsome effect.

Another merit possessed by this plant is that when in flower it may be removed to an ordinary sitting-room, where it will remain in perfection for a considerable time without any injury to the plant.

Lycaste Skinneri alba, Hort., *Pescatorea*, t. 39 (right-hand figure); *Fl. Mag.*, n. s., 1872, t. 35, fig. 1; *Lindenia*, iv., p. 21, t. 153; *Orchid Album*, v., t. 234.

CYPRIPEDIUM × LEDA.

This pretty hybrid Cypripedium was raised in the collection of John C. Bowring, Esq., Forest Farm, Windsor, from C. × Harrisianum ♀ and C. venustum ♂, and was described about a year ago, on the occasion of its flowering for the first time. A flower just received from Mr. Bowring shows that it has improved as the plant has become stronger. The dorsal sepal, lip, and staminode are almost reproductions of these organs in the pollen parent, except that the lip is rather browner in front and less veined. The petals, on the other hand, have much of the character of C. villosum, both in shape and colour. They are two inches long by half as broad near the apex. The influence of C. × Harrisianum is chiefly seen in some dark brown, more or less dotted, lines at the base of the petals. The parentage may be expressed thus:—C. venustum, $\frac{1}{2}$; C. villosum, $\frac{1}{4}$; C. barbatum, $\frac{1}{4}$: though the latter might be absent altogether, so little is it in evidence. We have not seen the leaf.

Cypripedium × Leda, *Gard. Chron.*, 1892, i. p. 202.

TRICHOPILIA PUNCTATA.

This interesting little Costa Rican species has again flowered with Messrs. F. Sander & Co., of St. Albans. It has the sepals and petals studded with numerous reddish-purple spots on a light green ground, in which respect it differs from every other species in the genus. In other respects it is nearly allied to T. laxa.

Trichopilia punctata, Rolfe in *Gard. Chron.*, 1889, i. p. 227.

NOVELTIES.

DENDROBIUM NOBILE VAR. BALLIANUM.—The varieties of Dendrobium nobile are becoming very numerous, but the subject of the present note is quite distinct from anything we have seen before, and also very handsome. Its most remarkable feature is the absence of the dark maroon disc, so characteristic of this species, which is replaced by a light pink area of similar size. The flowers are large and well shaped, the sepals and petals blush-white passing into blush-pink towards their extremities. The apex of the lip is also blush-pink, and between this and the soft pink disc the colour is pale sulphur-white. It appeared among the importations of Messrs. F. Sander and Co., of St. Albans, from whom we have received materials for description. It is dedicated by request to G. Sherland Ball, Esq., of Earlscliffe, Bowdon, Cheshire. It is a charming variety, and received a First-class Certificate from the Royal Horticultural Society on March 14th last.

DENDROBIUM NOBILE AMESIÆ.—Together with the preceding we also received flowers of another handsome variety, near D. nobile albiflorum, but with larger flowers. The sepals and petals are pure white, and the disc large and very richly coloured. It is dedicated to Mrs. F. L. Ames, of Langwater, North Easton, Mass., U.S.A. It received an Award of Merit from the Royal Horticultural Society on February 14th last.

PLATYCLINIS GLUMACEA VAR. VALIDA, Rolfe.—This is a very robust and remarkable variety of the above well-known species, with leaves nearly twice as broad as those of the ordinary form, yet the flowers are not appreciably different. The peculiarity, however, has led to its being confused with the quite distinct P. latifolia. It first appeared with M. A. A. Peeters, of St. Gilles, Brussels, then at Glasnevin, and now we have received it from H. J. Hunter, Esq., of North St. Andrew Street, Edinburgh. The leaves vary from over one to one and three-quarter inches broad. It is no mere trifling variation, but quite constant in character, and a fine plant covered with its graceful racemes, as shown in a photograph received from Mr. Hunter, has a very elegant appearance.

CYPRIPEDIUM APPLETONIANUM.—This plant is said to have been introduced with Cypripedium Hookeræ, but the leaves are not tessellated, and the flowers quite different. We have not seen it.—Gower in *The Garden*, Feb. 4th, p. 95.

THE HYBRIDIST.

Dendrobium × Benita.

Another elegant and very promising hybrid has appeared in the collection of W. E. Brymer, Esq., M.P., of Ilsington House, Dorchester; this time a Dendrobium, obtained by crossing D. aureum with the pollen of D. Falconeri, as we are informed by Mr. Powell, the gardener. It flowered in February last. The flowers are three and a half inches across, the sepals and petals spreading, pale blush, suffused with light rose towards their tips, the latter ten lines in diameter and nearly white below. The lip is spreading, with a very large maroon blotch, and a blush margin and apex veined with light purple, but no trace of yellow on the disc. The growths we have not seen. It is certainly a handsome thing, as might be inferred from its parentage, for D. aureum has an exceptionally good record in this respect, and D. Falconeri has yielded one of the handsomest Dendrobiums yet raised, namely the beautiful D. × Venus. We hope to see it when it flowers again.

Epiphronitis × Veitchii.

If we could reduce the stature of the rambling but beautiful Epidendrum radicans to a few inches, without impairing its floriferousness, or if a reduction in the number of flowers were compensated for by an increase in their size, a plant not unlike the one now under notice would be the result. It is a generic cross, obtained by Mr. Seden in the nursery of Messrs. James Veitch and Sons, from Sophronitis grandiflora crossed with the pollen of Epidendrum radicans. As regards habit the two plants are utterly diverse from each other, the one but a few inches high, the other, in its most robust state, almost as many feet. The flowers are also quite different in shape, but in colour they are almost exactly identical. In the hybrid the influence of the pollen parent greatly preponderates throughout, except in the length of the stems, which in the oldest plants do not yet exceed a few inches in height, though they may become longer with increased strength. The flower is like a glorified edition of the pollen parent, with a dash of crimson added in the sepals and petals, a little more yellow on the lip's disc, a few more crimson spots on the same, two smaller tubercles and a shorter keel. Singularly enough there is scarcely a trace of the peculiar structure of the mother plant, for the lip is flat, and altogether adnate to the long curved column; the broader petals, the less denticulate side lobes of the lip, and the slight modification of the crest, alone show the Sophronitis influence. The raceme is shorter and fewer-flowered than in the pollen parent, the flower over one and three-quarter inches in diameter, and the petals not quite half an inch broad. Flowers of the hybrid and the two parent species

have been kindly sent by Messrs. Veitch, from which the above account has been prepared. It is not only a very interesting generic cross, but a charming little plant. The generic name is compounded from that of the two parent genera.

Cypripedium × Ledouxiæ.

This is a pretty hybrid of rather doubtful parentage, which has just flowered in the collection of G. R. le Doux, Esq., of Langton House, East Molesey, and is dedicated to this gentleman's wife. It came up in a pot on which was a record of seed sown derived from C. callosum ♀ and C. insigne Chantini ♂. But of the latter there is not the slightest trace. There is a marked resemblance to C. × Harrisianum, however, and a strongly villose ovary, which must be traced back to C. villosum. C. × Harrisianum was evidently one parent. The other may have been C. callosum, but there is no trace of the warts on the petals, and there is a strong resemblance to C. × œnanthum which suggests the necessity of a comparison with C. × Creon. The dorsal sepal is almost wholly suffused with rosy-purple, except a broad white margin, a small green area at the base, and some purple-brown nerves. The other parts show some slight modifications from the C. × Harrisianum characters.

Cypripedium × Mrs. Warren-Hook.

A very charming hybrid with some resemblance to the best forms of C. × Harrisianum, but the flower delicately coloured and not unlike shot silk. The parentage is doubtful, but probably C. × Dauthieri × C. × œnanthum superbum. Leaves almost like C. × Harrisianum, but less spreading and rather broader. Dorsal sepal clear rosy-purple shading into rose at the margin, which is ciliate with white hairs; on either side of the apex is a small but conspicuous area of yellowish-green, while the disc has a prominent network of rich chestnut brown. Petals three inches long by one inch broad, superior half like the dorsal sepal, inferior whitish-green shaded with rosy-crimson, the base spotted with violet-purple, marginal ciliæ black. Lip reddish-brown shaded with purple. Staminode greenish-purple with a conspicuous tubercle and emerald-green reticulations. The plant, only one of which was raised, is now in the collection of the Hon. Charles G. Roebling, of Trenton, New Jersey, U.S.A., whose collection is rapidly increasing by the addition of rare and valuable species and hybrids, and who procured the subject of this note from Messrs. Pitcher and Manda. This charming flower is dedicated to a very refined and cultured lady, Mrs. E. Warren-Hook, who takes especial interest in Orchids and is an ardent admirer of Cypripedia in particular. Mrs. Hook is connected to Mr. Roebling by

the marriage of her sister to Colonel Roebling, a brother of the possessor of this plant.—H. T. Clinkaberry.

Cypripedium × Erato, Desb.

Raised by M. Charles Vuylsteke, of Loochristy, Ghent, from C. × Sallieri crossed with the pollen of C. hirsutissimum. It flowered in December last. Dorsal sepal roundish, olive-yellow, covered with small sepia spots, and strongly bordered and tinted with rose; lower one pale yellow tinted with bronze. Petals purple-red bordered with nankeen yellow, except at the base, which is amber-yellow marbled with maroon. Lip bronzy shaded with maroon, and minutely spotted inside. A vigorous and attractive hybrid.—C. de B.

Cypripedium × Zampa, Desb.

Raised in the same collection as the preceding from C. × Leeanum superbum ♀ and C. hirsutissimum ♂. The dorsal sepal is more spotted with sepia at the base than the seed parent, the petals more undulate, spathulate, and reddish-purple towards the extremities, and the lip more or less suffused with pale rose. It is a very pretty hybrid of robust habit.—C. de B.

Cypripedium × Mauriceanum.

Raised from C. × Harrisianum ♀ and C. Spicerianum ♂ in the collection of Madame O. Block, of Paris. In the dorsal sepal it somewhat resembles the pollen parent, but in the other segments is more like C. × Harrisianum. —C. de B.

Cypripedium × Constableanum.

A beautiful hybrid raised by Messrs. Pitcher and Manda, of Short Hills, New Jersey, from C. Fairieanum crossed with C. Dayanum. The characters of C. Fairieanum are said to be more pronounced than usual in the hybrid. It is named in honour of F. A. Constable, Esq., of New York.—Gower in *The Garden*, Jan. 28th, p. 75.

Cypripedium × Dibdin.

A hybrid raised by Mr. J. C. Cowley, in the gardens of F. G. Tautz, Esq., Hanger Hill, Ealing, between C. Argus and C. Boxallii. The flowers have the varnished appearance of those of C. × vernixium. The upper sepal is green, profusely striped and spotted with dark purple, with a narrow blush-white margin. The petals are whitish tinged with rose near their tips and spotted with blackish-brown; the lip greenish white tinged with rose on the face, and the staminode yellow with green reticulations in the centre.—O'Brien in *Gardeners' Chronicle*, Feb. 11th, p. 162.

Cypripedium × Tacita.

Raised in the collection of H. Graves, Esq., of Orange, New Jersey, U.S.A., from C. × Measuresianum and C. tonsum. The flowers are large, five inches across, waxy, and of a sepia-green tint shaded with vinous-brown. The dorsal sepal is veined with brown and margined with white, and the petals have a brown line down the centre.—R. M. Grey in *Garden and Forest*, March 1st, p. 105.

Cypripedium × Hebe.

A handsome hybrid raised in the collection of H. Graves, Esq., of Orange, New Jersey, from C. Spicerianum ♀ and C. × Stonei. It is most like the former, but the flower has a more graceful shape. The reflexed dorsal sepal is white with a green base and purple mid-nerve; the petals two inches long, acute, undulate, primrose-yellow shaded with brown; the lip apple-green tinted with brown in front, and the staminode lavender-purple with a yellow disc.—R. M. Grey in *Garden and Forest*, March 1st, p. 105.

CALENDAR OF OPERATIONS FOR APRIL.

By W. H. White, Burford, Dorking.

One of the principal causes of spot and disease among Orchids is imperfect and insufficient ventilation. It is therefore of great importance to all those who have the management of a collection to see, not only that each division is properly ventilated, but also that no great fluctuations of temperature occur. During the month of April great vigilance will be required on the part of the cultivator, as with the numerous sudden changes in the outside temperature it is almost impossible to keep up a regular temperature in the houses, either by day or night. Should the weather be cold or boisterous, little or no air will be required, as sufficient will pass through the laps in the glass and under the doors, but when the mornings are calm and bright, the bottom ventilators may be slightly opened, and as the inside temperature rises, gradually increase the amount of air and moisture. For several hours during the middle of the day, it is advisable to allow each division to become comparatively dry. This partial drying of the atmosphere will allow the plants to throw off any excess of moisture, which if retained would probably cause decay. If the external temperature at this time is above 50°, air should be given, by opening the ventilators on the sheltered side of the house.

In houses where Orchids do not thrive quite satisfactorily, much good may often be done by careful ventilation. A case in point came under my notice a few years ago. A span-roofed house, containing principally Cattleyas,

was a well-built structure, and the means of ventilation perfect. Yet the plants failed to make any progress whatever, although several expensive alterations and additions were made. After continued perseverance the remedy was found, and success followed.

At this time of year the foliage of Orchids is more likely to get scorched than at any other, and special attention should therefore be given to the shading. In the East Indian house, immediately the sun has sufficient power to raise the temperature six or seven degrees, the blinds should be lowered. In this house, where so many distinct species are grown, it is difficult to attend to the requirements of each separate species as regards shading, but a little selection simplifies matters considerably. Such plants as Dendrobiums, Catasetums, Mormodes, Diacrium bicornutum, Thunias, etc., should be placed in the lightest positions, while Cypripediums, Phalænopses, Aërides, Cirrhopetalums, Bulbophyllums, and the evergreen Calanthes do best on the shady side.

The occupants of the Cattleya house will not require shading quite so soon as the warmer-growing species, but when the sun is bright it will then be necessary. With the Mexican inmates it is quite different, as they thoroughly enjoy the increased sunlight, and if the ventilation is properly attended to, the plants will only require to be thinly shaded during the middle of the day. Odontoglossums, Masdevallias, and other occupants of the cool house, should be shaded almost as soon as the strong sunlight touches the foliage. Very little or no fire-heat will now be required in this division, except on very cold or frosty nights, but in the warmer houses enough must be maintained to keep up the prescribed temperatures.

A continual warfare must be kept up against all destructive insects, as with the increased sun-heat they will multiply rapidly. Now is the time of year to prevent them from obtaining a foot-hold amongst the plants, and exterminate them if possible. Black and yellow thrips are exceedingly troublesome insects, and every means should be employed to effect their destruction. An effectual remedy that I have found to check their progress is slight and frequent fumigations. One evening of each week is set apart for this operation. No plant is watered on this day, and no damping down allowed after mid-day, as the plants suffer less from the smoke when the air is dry. Where these insects abound, it is advisable to fumigate on the evening of one day and morning of the next, or on two consecutive evenings. After fumigation the plants will require a thorough watering, and the floors, staging, etc., should be well damped down. The plants should also be examined for thrips' eggs, which the smoke will not kill. These can only be got rid of by sponging the leaves with some weak insecticide. The following day the plants should be more heavily shaded than usual, as the leaves are more liable to be damaged by the sunlight after fumigating and dipping.

In houses where a considerable number of species are cultivated, there are always some plants that do not like tobacco smoke, and these it is advisable to take out while the operation is being done. Before returning the plants to their proper places, see that they are perfectly clean in every respect. The following genera suffer more from fumigation than other Orchids :—Calanthe, Bollea, Phaius, Platyclinis, Cœlogyne, Aganisia, Oncidium, Houlletia, and Miltonia, also Odontoglossum citrosmum. Thrips are very fond of the young growths, and flower spikes of Odontoglossums, Masdevallias, etc., and make sad havoc with them. With these cool-growing species fumigation is easily overdone, and much damage caused. Therefore the safest method of keeping these insects in check is frequent sponging and dipping.

By this time many of the Dendrobiums will have passed their flowering period, and will be starting to grow freely. Such varieties as D. nobile and its allies, D. × Ainsworthii, D. fimbriatum, and D. Dalhousieanum, do thoroughly well in pots, while D. Wardianum, D. crassinode, D. primulinum, D. Boxallii, D. Devonianum, D. tortile, D. Findlayanum, D. superbum, and its beautiful variety Burkei, succeed best in small shallow hanging pans, with perforations round the sides, through which the air circulates and helps to keep the roots in a healthy condition. I use these pans generally for Dendrobiums, in preference to the ordinary teak basket, as the plants are more easily managed when they require more root room. Baskets are very liable to decay, thereby injuring the roots, and when more root room is required, it is exceedingly difficult to remove them without doing serious injury to the living roots, owing to the tenacity with which they cling to the wood. Those plants that require a shift should be attended to at once.

In re-potting established plants, do not remove more of the old material than is really necessary, as Dendrobiums do not like their roots to be disturbed. Carefully break the old pot, taking away as much of it as possible, and if the drainage be well filled with roots, do not disturb it, but place the whole together into a size larger pot, filling up with clean broken crocks to within an inch of the rim. Generally, peat and moss has been the material recommended for this class of plants to root in, but after several years' experience I have found that they make larger bulbs, and also roots, and bloom more freely, when grown in living sphagnum moss mixed with broken crocks, which should be pressed into the pots firmly. I confidently recommend all Orchid growers to adopt this method and give it a fair trial.

All newly imported plants of Dendrobium should at first be placed in crocks only, and kept in a cool dry house until the young growths appear. Roots will immediately follow, when the plants should be potted, as above advised, and placed in their growing quarters. Over-potting must be carefully guarded against, for if the roots get into a mass of sodden compost, they speedily decay, and the young growths are stopped prematurely, soon

starting again into a weak sickly growth. After re-potting, keep the plants on the dry side for a few weeks, until the new roots have a firm hold of the compost, after which water may be gradually and more frequently given. When thoroughly established, syringing the plants will be found beneficial in keeping them free from red spider; also sponging the foliage occasionally with soft soapy rain water. Dendrobiums, with but few exceptions, require a hot moist atmosphere, with abundance of light. Where an East Indian house is not at command, an ordinary plant stove will suit them admirably. All the above-mentioned kinds are easily propagated, by taking off any of the pseudo-bulbs which have not bloomed, cutting them up in lengths, and laying them on sphagnum, in some hot, moist, propagating case; or by taking off any young growths which sometimes appear on the old bulbs.

Now is the best time to re-pot such species as Lissochilus and the deciduous Eulophias. Plant them in well-drained pots, with a mixture of fibrous loam, leaf mould, and coarse silver sand, adding a good sprinkling of broken crocks. Place the plants in a sunny position with the Mexican Lælias, and when in full growth copious supplies of water may be given, but when at rest treat the plants as previously advised for Habenaria militaris.

The beautiful Cattleya Trianæ and its many fine forms will by this time have done flowering, and a number of young roots fast pushing from the base of the last made bulb. The young growths will also soon start away, and quickly send forth fresh roots. If any plant needs top-dressing, or more pot room, do not delay either operation, or the young roots will get damaged, however careful the operator may be. In re-potting the plants do not disturb or injure the old roots if possible, but carefully place them in the new pots. Keep the plants well elevated above the rim of the pot, and use a few neat sticks to hold them firm. Allow plenty of drainage, in fact one cannot err in this respect, and over it place a thin layer of sphagnum, using good fibrous peat and moss in equal quantities for the compost. Pot moderately firm, and add with the compost some thick pieces of broken crocks, which will help the water to pass rapidly away, and thus prevent the compost from becoming sour.

The following plants may also now be safely re-potted or top-dressed if necessary:—Cattleya Percivaliana, C. speciosissima, C. Leopoldi, C. amethystoglossa, C. Gaskelliana, and the autumn-flowering C. labiata. After giving fresh material, keep them well shaded, and water sparingly until re-established. Cattleya speciosissima will grow and bloom freely when placed in shallow pans, hanging close to the roof glass of the Mexican house. Lycaste Skinnerii and its variety alba are both very useful and beautiful Orchids. Their flowers lasting a long time in perfection, and come into bloom when other flowers are scarce, which makes them specially valuable. These Lycastes may be grown well at the warm end of the cool house. Peat and moss well drained will suit them to root into. Sponge

the foliage over occasionally to keep them free from red spider, which is their greatest enemy.

Keep the night temperatures generally as previously advised, but if the weather be mild a slight increase may be allowed.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

BULBOPHYLLUM COMOSUM, Coll. and Hemsl. A remarkable species collected by General Sir H. Collett, in the Shan Hills, during the late Burmese War. It has nearly white, very hairy flowers. It flowered at Kew.—t. 7283.

ARUNDINA BAMBUSIFOLIA, Lindl. This is noted as "quite the most beautiful terrestrial Orchid of Northern India, and I know of no more attractive picture of its kind than a patch of grass-land in the Khasia Hills adorned with clumps of it in full flower." Figured from a plant in the collection of F. Wigan, Esq., Clare Lawn, East Sheen.—t. 7284.

BULBOPHYLLUM PECHEI, Bull. A species allied to B. Careyanum, with racemes of small purple-brown flowers. Sent by Mr. George Peché, a resident in Moulmein.—t. 7286.

GARDENERS' CHRONICLE.

PHAIUS × AMABILIS. (See p. 87 of our last issue.)—February 25th, pp. 226, 228, fig. 32.

GARDENERS' MAGAZINE.

CYNORCHIS GRANDIFLORA, Ridl. (See p. 59 of our February issue.)—March 11th, p. 138, with fig.

JOURNAL OF HORTICULTURE.

CYPRIPEDIUM × GERMINYANUM. A hybrid from C. × villosum ♀ and C. hirsutissimum ♂.—January 26th, pp. 67, 74, fig. 10.

SOBRALIA LUCASIANA, Hort. A species with large flowers somewhat like those of S. macrantha.—January 26th, pp. 74, 75, fig. 11.

ZYGOCOLAX × VEITCHII, Rolfe. A beautiful generic hybrid between Zygopetalum crinitum ♀ and Colax jugosus ♂, raised by Mr. Seden.—February 2nd, pp. 87, 94, fig. 13.

CYCNOCHES PENTADACTYLON, Lindl. (See p. 73 of our last issue.)—February 2nd, pp. 94, 95, fig. 14.

CALANTHE × GIGAS. (See p. 86 of our last issue.)—February 16th, p. 129, fig. 24.

CYMBIDIUM GRANDIFLORUM, Griff. A handsome Burmese species, which is rare in cultivation.—February 23rd, p. 153, fig. 27.

CYPRIPEDIUM × JOHNSONIANUM. A handsome hybrid from C. × nitens ♀ and C. Lawrenceanum ♂, raised by Messrs. F. Sander and Co., St. Albans. —March 2nd, p. 171, fig. 30.

CYPRIPEDIUM CONCO-LAWRE. A handsome hybrid, raised in the collection of Sir Trevor Lawrence, Bart., from C. concolor ♀ and C. Lawrenceanum ♂.—March 9th, p. 193, fig. 41.

CYPRIPEDIUM × PENELAUS. A hybrid derived from C. × calurum ♀ and C. caudatum Lindeni ♂.—March 16th, p. 219, fig. 45.

LINDENIA.

CYPRIPEDIUM × MEMORIA MOENSII. A handsome hybrid, raised by the late M. J. Moens, of Lede. C. Spicerianum is believed to have been one parent, the other is doubtful. It is compared with a purple C. × Leeanum. —t. 361.

CYPRIPEDIUM × LUCIENIANUM. A handsome hybrid, derived from C. villosum and either C. bellatulum or C. × œnanthum superbum, apparently the latter, as the influence of C. bellatulum, so pronounced in C. × southgatense, C. × Lawrebel, and C. × Paris, is imperceptible in the present one. —t. 362.

CŒLOGYNE HOOKERIANA, Lindl. An elegant little species from the Sikkim Himalayas, where it grows from 7,000 to 10,000 feet above sea-level. —t. 363.

MORMODES IGNEUM, Lindl. var. MACULATUM, Rolfe. A very pretty variety, differing from the original form in its spotted segments. Native of Peru.—t. 364.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

THE horticultural meetings of the month at Ghent and Brussels were somewhat overshadowed by the approaching Quinquennial Exhibition at the former place, for which things are being held in reserve. Some good Orchids, however, were exhibited. At the Ghent meeting two pretty hybrid Cypripediums were exhibited by Messrs. Ed. Vervaet et Cie, one derived from C. Boxallii × C. insigne Chantini, the other from C. Boxallii × C. Spicerianum. Both of them present a combination of the characters of the parent species. The same firm also sent the remarkable and beautiful Dendrobium nobile Cooksoni. M. Jules Hye sent several beautiful forms, including Odontoglossum triumphans maximum, a very large and richly coloured variety; Cattleya Trianæ var. Orion, with transparent rose and white petals; and a handsome unnamed Odontoglossum. M. Van

Imschoot contributed a superb Odontoglossum under the name of O. Rossii majus purpurascens.

At the meeting of the Orchidéene, of Brussels, held on March 12th, many remarkable Orchids were shown, among which we select a few as particularly worthy of notice. Lycaste Skinneri purpurata, a handsome variety with sepals clear rose, petals rich rose-purple, and a richly-coloured lip, was sent by M. Pourbaix and M. du Trieu de Terdonck, both of whom were awarded First-class Diplomas of Honour. Cypripedium × Spicerio-villosum from M. Bleu, also C. × Lathamianum inversum, and Mormodes Rolfeanum var. nigrum, from Messrs. Linden, all received similar awards. Two handsome hybrid Odontoglossums were exhibited by M. le Comte de Bousies. A number of familiar species were represented by good varieties, several of which received awards, but among rare Orchids we must not omit to mention Odontoglossum stellatum and Epidendrum (Nanodes) Mantini, both of which were exhibited by Messrs. Linden.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THE Orchid Committee had no light duties to perform on March 14th, when a large number of Orchids were brought to the Drill Hall, James Street, Victoria Street, Westminster. Out of twenty exhibitors of Orchids no less than seventeen were amateurs, which says a great deal for the steadily increasing popularity of these plants.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), contributed a group full of good things, for which a Silver Banksian Medal was awarded. There were many Dendrobiums, chiefly noticeable being D. crepidatum, a fine specimen of D. Findlayanum, a large plant of D. signatum; the hybrid D. × cheltenhamense (D. heterocarpum ♀ × D. luteolum ♂), like a greatly improved form of the female parent, the deep purple D. nobile Tautzianum, and D. murrhinianum, with blush white sepals and petals, and a deep crimson throated lip. Three robust specimens of Cypripedium Rothschildianum attracted attention, as did also an albino form of C. × Dauthieri, a plant exactly identical with one in Messrs. Sander's group. A Botanical Certificate was given to Holothrix (Tryphia) orthoceras, a tiny Orchid with ovate silvery veined leaves, and small flowers with a large toothed lip. A fine specimen of Phaius tuberculosus, a strong plant of Maxillaria sanguinea, and a beautiful rosy Odontoglossum Ruckerianum splendens were also in the group, the two latter receiving an Award of Merit.

From the Botanic Gardens, Glasnevin, Mr. F. W. Moore, F.R.H.S., sent a spike of the new Aërides platychilum, and flowers of Lycaste xytriophora.

J. Forster Alcock, Esq., F.R.H.S., Great Berkhampstead, exhibited a group, the chief feature being some fine specimens of Cypripedium Rothschildianum.

Norman C. Cookson, Esq., F.R.H.S., Wylam-on-Tyne (gr. Mr. W. Murray), sent Cypripedium × Bryan (C. philippinense ♀ × C. Argus ♂), having a white and brown upper sepal and heavily spotted petals.

E. Bickerton Evans, Esq., Whitbourne Hall, Worcester (gr. Mr. J. Williams), sent Cœlogyne flaccida.

W. E. B. Farnham, Esq., F.R.H.S., Quorndon House, Leicestershire (gr. Mr. Cooke), sent a splendid spray of Dendrobium × splendidissimum.

Walter Furze, Esq., F.R.H.S., Roselands, Broom Road, Teddington, was awarded a Silver Flora Medal for a splendid group, made up of Dendrobium heterocarpum, D. Brymerianum, D. × Ainsworthii, and D. nobile, a fine specimen of D. Wardianum, D. Dalhousieanum, and D. superbum giganteum; Cypripedium venustum, C. × Wendlandianum (like a dark Harrisianum), two large and good varieties of C. Boxallii, the coppery coloured C. × politum, C. callosum, Cattleya Trianæ, etc.

Gustav R. le Doux, Esq., F.R.H.S., Langton House, East Molesey, sent a group of Odontoglossums and Cypripediums, the novelties being the deep yellow and purple brown Langton House var. of O. triumphans, and C. × Ledouxiæ, resembling a rich C. × Harrisianum.

From the collection of C. J. Lucas, Esq., F.R.H.S., Warnham Court, Horsham (gr. Mr. Duncan), came a group of well-grown Odontoglossums, among them being the pale yellow O. luteolum, O. triumphans, O. Cervantesii decorum, etc.

S. G. Lutwyche, Esq., F.R.H.S., Eden Park, Beckenham (gr. Mr. J. May), sent Dendrobium Devonianam candidum.

Baron Sir Henry Schröder, F.R.H.S., The Dell, near Staines (gr. Mr. Ballantine), submitted Lælia × vitellina (parentage?) with brilliant buff yellow flowers, to which a First-class Certificate was granted.

H. Shaw, Esq., Stamford House (gr. Mr. J. Cliffe), sent flowers of Maxillaria Sanderiana.

A. H. Smee, Esq., F.R.H.S., The Grange, Hackbridge, Surrey (gr. Mr. C. W. Cummins), exhibited three large branching panicles of Cyrtopodium Saintlegerianum, which for size and vigour were unsurpassed.

W. Soper, Esq., F.R.H.S., 307, Clapham Road (gr. Mr. G. N. Daius), staged a group, consisting of Odontoglossum Rossii majus, in a basket three feet long, Cattleya Loddigesii, Sophronitis grandiflora, Oncidium pubes, etc.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester

gr. Mr. Johnson), exhibited Dendrobium nobile nobilius, and a specimen of Lycaste Skinneri alba, which produced ten large flowers from one pseudo-bulb, and received a "Cultural Commendation."

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), exhibited a good group, consisting chiefly of fine varieties of Odontoglossum crispum, O. Cervantesii decorum, O Pescatorei, O. luteopurpureum, and one called O. Waltoniense, with pale yellow segments heavily blotched with deep reddish brown.

Walter C. Clark, Esq., F.R.H.S., Orleans House, Aigburth Drive, Sefton Park, Liverpool, sent a strong spike of Cymbidium Lowianum, bearing twenty-three large flowers, the reddish purple triangular blotch on the front lobe of the lip being particularly vivid.

F. Wigan, Esq., F.R.H.S., Clare Lawn, East Sheen (gr. Mr. W. H. Young), exhibited a strong specimen of Megaclinium falcatum with four spikes, and a remarkably vigorous plant of Cœlogyne pandurata, with nine brilliant green and black flowers, for which a "Cultural Commendation" was awarded.

Reginald Young, Esq., F.R.H.S., Fringilla, Linnet Lane, Liverpool, sent a flower of Cattleya Trianæ, with blush petals and sepals, and a deep magenta purple tubular lip.

Messrs. F. Horsman and Co., Colchester, received an Award of Merit for Lycaste Skinneri "Hettie," the sepals white flushed with rose at base, petals deep crimson, and lip creamy white.

Messrs. J. Laing and Sons, Forest Hill, effectively displayed some Orchids among a large group of other flowering plants. Dendrobium crassinode, D. Jamesianum, D. Wardianum, D. × Ainsworthii, Cypripedium callosum, a fine Cymbidium Lowianum, etc., being represented.

Messrs. Linden, L'Horticulture Internationale, Parc Leopold, Brussels, exhibited their variety of Phalænopsis amabilis, Ldl., which was remarkable for the absence of crimson streaks and spots on the side lobes and crest of the lip.

Messrs. H. Low and Co., Clapton, staged a select collection containing some fine Dendrobium Brymerianum, D. Wardianum, and D. Findlayanum, Angræcum citratum, Ada aurantiaca, a strong plant of Cypripedium × De Witt Smith (C. Lowii ♀ × C. Spicerianum ♂), and the canary yellow Bulbophyllum Sillemianum.

A Silver Banksian Medal was awarded to Messrs. F. Sander and Co., St. Albans, for a fine group, in which figured Cœlogyne Sanderæ, with white flowers and orange crest, and Dendrobium nobile Ballianum, both of which received a First-class Certificate. Other noticeable plants were the albino C. Dauthieri Sander's variety, the rare Oncidium Brunleesianum, with a few flowers, the white Aërides cylindricum, Phaius × amabilis, certificated at the last meeting when shown by Messrs. Veitch, Dendrobium Kingianum, with purple flowers, D. luteolum, Trichopilia suavis, etc.

A Silver Banksian Medal was also awarded to Messrs. B. S. Williams and Son, Upper Holloway, for a large group, in which were some excellent specimens of Cypripedium × Morganiæ, C. Rothschildianum, C. × Williamsianum (C. venustum ♀ × C. villosum ♂), C. × Peetersianum, which seems to be the same as C. × selligerum, C. × Huybrechtianum (C. hirsutissimum ♀ × C. Spicerianum ♂), a distinct and richly coloured hybrid intermediate between its parents. Cymbidium eburneum, Odontoglossum × mulus Holfordianum leucopterum, Cirrhopetalum picturatum, a green lipped Lycaste gigantea, etc.

Messrs. J. Veitch and Sons, King's Road, Chelsea, are indefatigable in raising new hybrids, and on this occasion showed several; among them being Dendrobium × Euryalus (D. × Ainsworthii ♀ × D. nobile ♂), with a large creamy lip having a deep purple eye; D. × Aeneas (D. japonicum ♀ × D. crystallinum ♂) with oblong creamy sepals and petals tipped with pale rose, and a creamy lip also tipped with rose and a fulvous brown disc. Epiphronitis × Veitchii (Sophronitis grandiflora ♀ × Epidendrum radicans ♂), with brilliant flowers, and Epidendrum × Endresio-Wallisii were also shown. These plants of the latter were all from the same seed pod, yet quite distinct in the colour and shape of the flowers, and even the leaves. Calanthe tricarinata was also shown, with white and lilac flowers.

M. Ch. Vuylsteke, Loochristy, Ghent, sent an Odontoglossum called albo-cupreum, which seems intermediate between O. blandum and O. constrictum. The sepals and petals are whitish blotched with brown, and the lip fiddle-shaped, white, with two projecting yellow teeth.

REPLIES TO CORRESPONDENTS.

J. C. B., Windsor.—Many thanks for flowers sent.

H. J. H., Edinburgh.—Platyclinis latifolia, Lindl., has quite different flowers, and much **shorter leaves.**

C. W., Birmingham.—Many thanks for photograph: next month.

W. S., Walton.—One of the multitudinous forms of Odontoglossum × mulus, a natural **hybrid between O. gloriosum and O. triumphans.**

H. T. C., Trenton.—Many thanks for your letter.

R. M. G., Orange.—Many thanks for photograph, which we may be able to utilise. The **Oncidium is a form of O. barbatum, Lindl.**

H. J. R., Florence.—Cypripedium Bullenianum, not C. Volonteanum. The lip is curiously abnormal, but we have seen similar malformations in other species.

ERRATUM.

At p. 69, line 23, the word "first" should be corrected to "second."

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THE ORCHID REVIEW:

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DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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NOTICES.

The ORCHID REVIEW is published regularly on the first of each month.

The Editors invite short communications on interesting subjects, also portraits, etc., of rarities.

All communications and Books for review, should be addressed :—The EDITOR OF THE ORCHID REVIEW, Lawn Crescent, Kew, and should be sent as early in the month as possible.

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THE ORCHID REVIEW.

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NOTES.

THE Ghent Quinquennial International Exhibition, to which we have previously alluded, was held from April 16th to 23rd, and was undoubtedly a great success. The Orchids, with which alone we are concerned, were very numerous, and formed a most brilliant display. Many of the plants were exceedingly well grown and flowered, and were staged in a way which set their beauty off to the greatest advantage. A report is given in another column, from which it will be seen that Messrs. Heath and Son, of Cheltenham, and Messrs. Pitcher and Manda, of Swanley, carried off prizes for Orchids.

The afternoon lecture of the Royal Horticultural Society on April 11th, entitled "Orchid Life in Guiana," to which we alluded at p. 97, had unfortunately to be postponed. The secretary read a letter from Mr. Everard im Thurn, who was on his way to Barbadoes, stating that he had been unable to prepare the paper before his departure, but had written it on the voyage, and would send it immediately on his arrival. Hitherto, however, it had not come to hand.

A meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on May 9th, when the Orchid Committee will meet at 12 o'clock, noon.

The Great Annual Flower Show of the Society will be held in the Inner Temple Gardens on Thursday and Friday, May 25th and 26th. Class 15 of Section 1 (Plants and Flowers) is set apart for Orchids, and, as on previous occasions, a number of Silver Cups and Medals will be awarded according to merit.

This show is always famous for the magnificent display of Orchids brought together, and we have reason to believe that on the present occasion the Exhibition will be fully up to the average of former years. Intending Exhibitors should give notice to the Secretary not later than May 20th, on forms of entry to be obtained from him.

We have received the Schedule of Prizes of the Grand Exhibition of Orchids, etc., of the Royal Botanical and Horticultural Society of Manchester, to be held in The Gardens, Old Trafford, Manchester, from the 19th to the 23rd of May, 1893 (inclusive). Various Cups and Money Prizes are offered. Intending Exhibitors must give at least six clear days' notice to the Secretary, Mr. Bruce Findlay, Botanical Gardens, Manchester.

We note Classes for the best Miscellaneous Collection of Orchids in bloom, both for Amateurs and Nurserymen, for the best thirty Orchids, also for ten. Also for the best collections of Odontoglossums, Cypripediums, Cattleyas, and Dendrobiums. Messrs. F. Sander and Co. offer a Silver Cup for the best new Orchid sent out by them since 1887. There are also two Veitch Memorial Medals, one for the best Hybrid Orchid already in commerce, the other for one not in commerce; also a Williams Memorial Medal and £5, for the best *bona-fide* specimen Orchid in the show.

The sale of the Langton House collection of Orchids, brought together by G. R. le Doux, Esq., of East Molesey, is announced by Messrs. Protheroe and Morris, to take place at their Central Sale Rooms, Cheapside, on March 16th and two following days.

At the sale of the Quorn House collection of Orchids, a fine plant of Cattleya Mendeli with thirty-two pseudobulbs, eight of them with sheaths, was sold for 220 guineas, the purchasers being Messrs. Hugh Low and Co. of Clapton.

A correspondent suggests that notes of sales of rare and interesting Orchids, with the prices they realise and their purchasers, would be an interesting feature of the REVIEW, as it is frequently very difficult to ascertain the whereabouts of such specimens. We quite endorse the remark, and only hope our readers will send us such particulars from time to time. Where, for example, is the interesting Cattleya resplendens, Rch. f.? And we have a list of others which we are obliged to hold over for the present.

THE HISTORY OF ORCHID HYBRIDISATION.

PART V.

(*Continued from page* 103.)

THE most remarkable hybrid of 1886 was undoubtedly the plant described as Lælia × Batemaniana, which was raised by Mr. Seden, in Messrs. Veitch's establishment, by crossing Sophronitis grandiflora with the pollen of Cattleya intermedia, the former here utilised for the first time. The seed was sown in June, 1881, and the first flowers expanded early in August, 1886, the plant being a little over five years old. Reichenbach called it "a lovely gem, a miniature Lælia," and added, "This novelty offers a wide field for considerations of nomenclature. Are all hybrids between what we call genera to get intermediate names? . . . The effect of mixing a Sophronitis and a Cattleya is a Lælia; hence I must reduce Sophronitis to Lælia, except S. violacea, with a remodelled character." It was dedicated to the veteran Orchidist, James Bateman, Esq., of Worthing, whose name had been known in connection with Orchids for upwards of half a century, and who is happily still amongst us. The plant has since been called Sophrocattleya × Batemaniana, which is certainly more descriptive of its origin.

In 1886 evidence was forthcoming of other accessions to the ranks of the hybridists, as seedlings raised by three new operators were now described for the first time.

The first was Cypripedium × Io, raised by Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from C. Argus ♀ and C. Lawrenceanum ♂. It is a showy thing, the flower, though modified in shape, approaching C. Argus much more nearly than C. Lawrenceanum.

Cypripedium × apiculatum came next. It was raised by D. O. Drewett, Esq., of Riding, Mill-on-Tyne, from C. barbatum and C. Boxallii, the former believed to have been the seed parent. It appears to have been the first hybrid raised from C. Boxallii.

The third was a Selenipedium, raised by Mr. Marshall, of Enfield, from S. caudatum, crossed with the pollen of S. Schlimii. It was dedicated to the late Mr. W. Wilson Saunders, "the Mæcenas of horticulture of his time," under the name of Cypripedium × Saundersianum. It is a very handsome hybrid, and still very rare and valuable. Its history and parentage were not recorded in the original description.

Five very interesting hybrids flowered in Messrs. James Veitch and Sons' establishment, at Chelsea, during 1886, as follows:—

Cypripedium × Winnianum was raised from C. villosum, crossed with the pollen of C. Druryi, and is fairly intermediate in character. It was dedicated to Charles Winn, Esq., of Selly Hill, Birmingham.

Cypripedium × orphanum was named and described by Reichenbach,

who remarked, "This poor plant has no known parents; it is an orphan" —hence the name proposed. The author, however, suggested C. Druryi and C. Argus as the unknown parents. Of the former there can be no doubt; and, from the character of the hybrid, it is almost equally certain that C. barbatum, not C. Argus, was the other parent.

Zygopetalum × leopardinum also appeared without a record of its parentage, and Reichenbach could only suggest that *Z.* maxillare was probably one parent. Colax jugosus has since been suggested as the other, which is just possible. It is a pretty little plant.

Masdevallia × glaphyrantha is believed to have originated from M. infracta, crossed with the pollen of M. Barlæana, and it bears the strongest evidence of such a parentage. It is interesting to note that the two parents belong to different sections of the genus.

Cypripedium × Tautzianum, the last of the five, was derived from C niveum ♀ and C. barbatum ♂, and was dedicated to F. G. Tautz, Esq., of Hammersmith. It is an elegant little plant, in which the characters of C. niveum are strongly represented.

Calanthe × sanguinaria was raised in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, but its parentage was unfortunately lost. It is a handsome and brilliantly-coloured form, allied to C. × Veitchii.

Two other very interesting events, which took place in 1886, complete our account for the year, both of which may be said to have established a record.

The first was the appearance of Lælia × lilacina, in the collection of F. A. Philbrick, Esq., of Oldfield. It appeared in an importation of L. crispa, but when it flowered it proved to be intermediate between that species and L. Perrinii, which grow together in South Brazil. Singularly enough Lælia × Pilcheri, which flowered for the first time in 1864, was raised by Mr. Dominy from these very two species, and though L. × lilacina showed one or two slight differences from L. × Pilcheri, Reichenbach remarked, "I believe it must be regarded as a variety of that mighty beauty." Thus its parentage was solved beforehand.

The second event possesses a double interest, as the first successful experiment undertaken to prove the origin of a wild plant, and also the first artificial hybrid Phalænopsis which flowered in cultivation. When, in 1853, Phalænopsis × intermedia first appeared, as a solitary plant in a batch of P. Aphrodite (or P. amabilis, as it was then wrongly called), sent by Thomas Lobb to Messrs. Veitch from the Philippines in the previous year, Lindley suggested that it might be a natural hybrid between that species and P. rosea. With a view to prove this hypothesis, Mr. Seden crossed P. rosea with the pollen of P. Aphrodite, and when the resulting progeny flowered for the first time, in 1886, it proved absolutely identical with P. ×

intermedia. The shrewdness of Dr. Lindley's suggestion will readily be admitted when it is borne in mind that no artificial hybrids were then in existence.

The work was now being rapidly extended over a wider field, for in 1887 hybrids raised by at least seven new operators flowered for the first time. In fact Reichenbach remarked that "All Orchidic England is now engaged in the procreation of mules." We may first consider the hybrids raised by these new operators, taking them in the order in which they were described.

First came Dendrobium × Vannerianum, which was raised by W. Vanner, Esq., of Camden Wood, Chislehurst, from D. moniliforme (D. japonicum) and D. Falconeri, the former believed to have been the seed parent. It flowered when between four and five years old, and was described as a lovely novelty.

Cattleya × Harrisii was raised by Dr. Harris, of The Grange, Lamberhurst, Kent, from Cattleya Leopoldi and C. Mendeli, the latter probably the pollen parent. It is a very handsome and distinct Cattleya, with amethyst-coloured segments, and the front lobe of the lip rich purple. Dr. Harris, it will be remembered, first gave Mr. Dominy the idea of hybridising Orchids, and now we find him making experiments on his own account. Others raised by him will have to be mentioned hereafter.

Dendrobium × Schneiderianum is said to have been raised from a cross effected in the collection of Mr. Oscar Schneider, of Fallowfield, near Manchester, from D. Findlayanum ♀ and D. aureum ♂. The plants, however, were raised by Mr. Holmes, gardener to Mr. C. Moseley, at Grange Thorpe, Rusholme, Manchester, where they flowered for the first time in 1887.

Masdevallia × Hincksiana was the first hybrid raised by Captain Hincks, of Breckenbrough, Thirsk, Yorkshire. Its parents were M. tovarensis ♀ and M. ignea ♂. It is a lovely thing, with light ochre-yellow or buff flowers, which become cream-coloured with age. Strong plants produce two-flowered scapes, and as one flower opens in advance of the other the effect is very curious.

Cypripedium × Hornianum was raised by Mr. F. Horn, gardener to Baron Nathaniel de Rothschild, Hohe Warte, near Vienna, from C. superbiens and C. Spicerianum. It is not recorded which was the seed parent.

Cypripedium × Charles Canham was raised by "an amateur," whose name for some reason has not been divulged. C. villosum and C. superbiens were the parents, the pollen being derived from the latter. It is an exceptionally large and handsome hybrid, most resembling the pollen parent in the flower. The stock was acquired and distributed by Messrs. James Veitch and Sons. It was dedicated to Charles Canham, Orchid foreman in the Royal Exotic Nursery.

Masdevallia × Geleniana was raised in the establishment of Messrs. F.

Sander and Co., of St. Albans, from M. Shuttleworthii ♀ and M. xanthina ♂. It was dedicated to Baron Hruby von Gelenye, of Peckau, in Bohemia. In describing it Reichenbach remarked, "This is the *débût* of Mr. F. Sander in Orchid hybridising, and very many more are forthcoming."

A second hybrid raised by Dr. Harris, of Lamberhurst, which flowered in 1887, was described as Cattleya × Miss Harris, in honour of that gentleman's daughter. It was derived from C. Mossiæ ♀ and C. Schilleriana ♂. Curiously enough, the flower is remarkably like that of the pollen parent in shape, the influence of the mother plant being chiefly seen in a modification of the colour.

Lælia × Novelty was also raised by Dr. Harris, from Lælia pumila ♀ and L. × elegans ♂. It is a pretty little plant, most resembling the former.

Cypripedium × Mrs. Canham was derived from C. superbiens ♀ and C. villosum ♂, and thus is the reversed cross of C. × Charles Canham, its origin and history being otherwise identical with the latter. It was dedicated to Mrs. Canham. Its flower is also very large, but much more like that of C. villosum, in fact in each case the flower takes most after the pollen parent.

(To be continued.)

EPICATTLEYA × GUATEMALENSIS.

This handsome Orchid is a natural hybrid between Epidendrum auran-tiacum and Cattleya Skinneri, and was originally found growing on the same tree with these two species, by Mr. Skinner, who sent it to Messrs. James Veitch and Sons, with whom it flowered in March, 1861. It was originally described as Cattleya × guatemalensis, and when exhibited at a meeting of the Royal Horticultural Society it was awarded a First-class Certificate. It possesses an unmistakable combination of characters of the two parent species, and its beautiful flowers are quite intermediate in colour, which is a peculiar orange-colour flushed with rose. It is a very rare plant, though one or two other individuals have since appeared, to one of which Reichenbach gave the name of var. Wischhuseniana. A raceme of this variety was exhibited by the Right Hon. Joseph Chamberlain, M.P., at a meeting of the Royal Horticultural Society, on April 11th last, and received an Award of Merit. It differs but slightly from the original form. Its present name was given to indicate its descent from parents belonging to two different genera.

Epicattleya × guatemalensis, Rolfe in *Gard. Chron.*, 1889, i. p. 491.
Cattleya × guatemalensis, T. Moore in *Fl. Mag.*, 1861, t. 61 ; Rchb. f. in *Gard. Chron.* 1888, ii. p. 378 (var. Wischhuseniana).

NOVELTIES.

CYPRIPEDIUM BULLENIANUM VAR. APPLETONIANUM, Rolfe.—This is the Cypripedium Appletonianum, Gower, in *The Garden*, Feb. 4, 1893, p. 95, mentioned at p. 115 of our last issue, of which we have now received a flower and leaf through the kindness of W. M. Appleton, Esq., Tyn-y Coed, Hill Road, Weston-super-Mare. The flower is precisely that of a light-coloured C. Bullenianum (Rchb. f.), but the leaf is remarkably different. Instead of having the light grey ground colour with darker blotches, so characteristic of this species, and its ally C. Hookeræ, it has a bright green leaf very obscurely reticulated with dark green nerves. We have not previously met with anything like the present one among the numerous examples of C. Bullenianum examined, though from the identity of floral structure it is evidently only a remarkable variety of this species. As already remarked, it is a light-coloured form, the tips of the petals being lightly flushed with lilac-purple, and the spots along the upper margin very small. The small staminode, so different from that of the allied C. Hookeræ, is absolutely characteristic. It will be an interesting matter to watch the development of the plant, also to see if other individuals are forthcoming.

ODONTOGLOSSUM × WILCKEANUM VAR. ELEGANS, Rolfe.—A particularly bright and pretty variety of the natural hybrid Odontoglossum × Wilckeanum has just appeared with Messrs. Austin and McAslan, The Nurseries, Cathcart, near Glasgow, which is distinct from anything we have seen before. It comes nearest to the variety sulphureum, and has similar, strongly toothed, though slightly narrower petals. In that, however, the whole flower is of a primrose tint, almost without markings. In the present one the sepals are of a distinctly brighter yellow, with a large chestnut blotch just above the middle, two or three smaller ones just below it, and a very few very small spots near the base. The petals and lip are of a lighter, primrose shade, almost unspotted, the former with one or two, and the latter with four, quite small chestnut spots. The flower is over $3\frac{1}{2}$ inches across from tip to tip of the petals. The clear colours and the marked contrast between the sepals and petals give the present one a very bright and attractive appearance.

ODONTOGLOSSUM PESCATOREI VAR. LEWISII.—A distinct and pretty form of Odontoglossum Pescatorei was exhibited at a meeting of the Royal Horticultural Society, on March 28th last, under the above name, by Messrs. W. L. Lewis and Co., of Southgate, of which some flowers have been sent to us. They are of medium size, the sepals and petals white and unspotted, but with a light suffusion of pale purple on the sides of the

lateral sepals. The lip has a broad, wedge-shaped, deep violet-purple blotch, gradually narrowing towards the apex, in front of the yellow crest. The side lobes are also more suffused than usual with the same colour, and there is a small spot on either side of the isthmus, which is sometimes confluent with the base of the large wedge-shaped blotch. It is the peculiar arrangement of the colour on the lip that gives to the plant its distinctive appearance, which is certainly bright and attractive, though, like many others, it is rather an individual than a variety in the true sense. O. Pescatorei, however, is far less variable than the polymorphic O. crispum.

NOTICE OF BOOK.

A Manual of Orchidaceous Plants cultivated under glass in Great Britain. Part IX. James Veitch and Sons, Royal Exotic Nursery, Chelsea. S.W.

We have received Part ix. of the above invaluable work, which is devoted to Cymbidium, Zygopetalum, Lycaste, and the allied genera of Cyrtopodieæ, also Maxillaria, Stanhopea and its allies, and to Rodriguezia and one or two other small genera of Oncidieæ which have not found a place in preceding parts—in short, 38 genera in all. It contains 189 pages of text, together with an index and numerous woodcuts. The work is so well known that a lengthened notice is quite unnecessary; suffice it to say that it maintains its high standard of excellence, and will be invaluable as a work of reference to cultivators and others.

One or two points strikes us in turning over the pages. *Zygopetalum* crinitum and *Z.* intermedium are reduced to the rank of varieties of *Z.* Mackayi, while *Z.* brachypetalum, which is assuredly less distinct, is retained. This species also is in the *Botanical Register*, but on page 9, not 5, as given by Reichenbach. The precise habitat of Maxillaria grandiflora is noted as "only known to the collectors who sent it to Europe," but we must point out, however, that at least four localities are known, in Ecuador, Peru, New Granada, and Venezuela, and that the species is widely diffused. Lycaste macrophylla is made a synonym of L. plana, but as the former is mentioned in the original description of L. plana, as based on the older Maxillaria macrophylla, Pæpp. and Endl., the former is the name which must be retained. L. × hybrida must be cited from this work, not from the *Gardeners' Chronicle* for 1878, where it is only alluded to as a "hybrid Lycaste." L. Smeeana, cited after Reichenbach as a natural hybrid, is evidently a good species. These points are not mentioned, however, as detracting from the value of the work, which contains a mine of information of the most valuable kind.

DENDROBIUM × ASPASIA.

THE subject of our present illustration is a handsome hybrid raised from Dendrobium aureum ♀ and D. Wardianum ♂, first in the collection of Messrs. James Veitch and Sons, of Chelsea, and afterwards in that of C. Winn, Esq., Selly Hill, Birmingham. It was first exhibited by the former firm on

Fig. 9. DENDROBIUM × ASPASIA.

April 9, 1889, on the occasion of its flowering for the first time, under the name of Dendrobium × Wardiano-aureum. The flowers had not then reached their normal development, but on the 11th of March in the following year it was awarded a First-class Certificate by the Royal Horticultural

Society. The photograph here reproduced was kindly sent by Mr. Winn, and represents the plant raised in his own collection. He states that it is a very free grower, with strong thick pseudobulbs, and very floriferous. A living flower sent at the same time shows that the sepals and petals are creamy white, tipped with light rose-purple, which is most distinct on the petals. The lip has a very large orange disc, on which is an irregularly pencilled crimson blotch; in front of this is a cream-white area, and, finally, the apex is rose-purple. Altogether it is a very handsome plant, and Mr. Winn remarks that it has been very much admired. He also states that one of the plants raised from the same seed-pod is nearly white, with the exception of the disc, which is normal in colour. The other characters of the plant can best be seen by a glance at our illustration, which conveys more to the eye than the longest description.

Dendrobium × Aspasia, Hort.; *Gard. Chron.*, 1890, i. p. 336.
D. Wardiano-aureum, *Gard. Chron.*, 1889, i. p. 490.

AN ORCHID COLLECTION FIFTY YEARS AGO.

EACH of our previous issues has contained an account of some famous modern collection. To-day we vary the proceedings with an account of an ancient one, the facts of which have been kindly communicated by a veteran who served under Donald Beaton, one of the most successful gardeners of his day, and one who paid considerable attention to Orchids, as the following notes will prove. It will serve to show how great an advance has been made in the interval which has since elapsed, both in the composition of Orchid collections and in their management, and will doubtless prove interesting to our readers, few of whom can have any personal recollections of this remote period. It was Beaton, it will be remembered, who first used brick troughs of water for heating hothouses. We have prefaced the account in question with a few general remarks on Beaton and his methods.

In 1836, when Beaton was gardener to W. Gordon, Esq., of Hatfield, some of his notes on Orchid culture were published in the second volume of Paxton's *Magazine of Botany* (p. 263). He there remarks that he never did and never could purchase any of these plants, so that he had to commence with only the smallest pieces, presumably given, or obtained in exchange. He then details his method of treatment, and we need hardly remark that it was before the days of cool Orchid growing.

"I never allow young plants," he remarks, "to have a day's rest till they attain a flowering size, or are otherwise well established, or, in other words, I keep up a constant stimulus." He then proceeds to show how

this was done. "The last two winters I removed my large plants from the regular Orchideæ house for wintering, and kept my smallest plants in a regular heat of from 70° to 80°, and had a good crop of cucumbers to the bargain." Poor plants!

With regard to potting, he observed—"I never pot young plants until two years or more old, and well supplied with roots." Here is his mode of treatment :—The young plants were fastened to a ball of moss, which was held together by copper wire and kept moist, but no water allowed to touch the plant. When the balls were well rooted, more moss was added, and the whole placed in a forked stick, formed by three diverging branches, and hung up in the house. Soon the roots monopolised both moss and stick, and now was said to be the time to pot. The stick was now placed in a pot so that the plant was just above the rim, and the interval filled up with turf (peat) ; or other material which might be supposed to answer the same purpose. The plants were not watered overhead during the winter, but the house was kept moist.

Soon afterwards Beaton entered the service of Thomas Harris, Esq., of Kingsbury, Kilburn, and in 1839 he again wrote an article, which appeared in Loudon's *Gardener's Magazine* for that year (p. 552). Here he states that he still follows the same practice with but little variation, and that the collection at Kingsbury shows as much evidence of successful cultivation as any in the country. He further remarks that his aversion to pot culture has been increasing ever since, and that he is quite certain that no argument will ever induce him to reconcile himself to the present hideous method of pot culture—the plants placed on mounds of earth raised over the tops of large pots—and the still more frightful system of plunging these large pots in tan, to receive bottom heat. Bottom heat by hot water, he added, would probably prove beneficial, if it could be carried out, but even then he would use no pots. He recommends in preference flat-bottomed baskets of copper wire, placed on the tops of pots on some imperishable material over the hot-water pipes. Or they might be hung up, when the soil would be less liable to become sodden. They should be three to four, rarely six inches deep, lined inside with pieces of turf (peat) not quite touching ; over this some rough pieces of turf were to be laid, and the plants planted. Delicate plants he recommended should first be planted in a small pot in the centre, round which turf and crocks were to be placed in equal quantities.

Some species were grown on forked sticks, a method which he observed was also carried out by Mr. Fortune, in the Horticultural Society's garden, and, in the case of Stanhopeas and others, with great success.

As regards treatment, he observed that Orchids must have their season of rest if they were wished to flower, but if not, they should be given a stimulus (*i.e.* of heat) all the year round, a method successfully adopted by

Messrs. Loddiges. Finally, if a plant was weak the flowers should be picked off as they appear.

"When your plant is in flower," he remarks, "wrap moss, paper, or some such article round the basket and take it to the drawing-room. This will obviate the necessity of ladies entering the Orchidaceous house, which few of them like to do, and the change will be a great benefit to your plant. After unloading itself of its beauty and fragrance in the drawing-room it will begin growing when brought back to the Orchidaceous house with redoubled exertions."

At Kingsbury Beaton appears to have been very differently situated with regard to obtaining plants, for Mr. Harris despatched a collector, one Charles M'Kenzie, in search of Orchids. Beaton's treatment of newly imported plants was in accord with the modern system in principle, as its object was to gradually restore their plumpness before making any attempt to plant them, but some of the details, such as stacking them in piles and covering them with mats, have long been superseded.

About a year later Beaton was appointed gardener to Sir William Middleton, Bart., at Shrubland Hall, near Ipswich, where he again had an Orchid house under his charge, and it is to this collection that our article is specially devoted, though it seemed desirable to preface it with an account of Beaton and his methods. For the following particulars we are indebted to our esteemed correspondent, who was a grower of Orchids until quite recently, and who, with one or two other veteran Orchidists, we are proud to number among our readers.

Few gardeners of the present day knew the late Mr. Donald Beaton, who was for many years gardener to the late Sir William Middleton, Bart., Shrubland Hall, near Ipswich, and a still less number of Orchid growers: indeed, he was better known to his contemporaries as a pioneer of the "bedding out" system of flower gardening, and as a hybridiser of the bedding or Zonal Pelargonium; yet he was a grower and a lover of Orchids at a time when their management was far less understood than now, and when Orchidists numbered about one to a hundred of those of the present day. As I had the pleasure of serving under him as plant foreman in 1847 and 1848, I have thought that perhaps a list of the principal kinds then grown there might be of interest to the readers of the ORCHID REVIEW.

As already hinted, the cultivation of Orchids was then but little understood, in comparison with these times, and one Orchid house had to find accommodation for all the family; whereas now there are usually several houses set apart for their culture, in which they can be classified according to their respective requirements, as to temperature, moisture, &c. It was a rough-and-ready method—or would be so considered at the present day—nevertheless some of the Orchids which like stove treatment succeeded very well, and especially the old Phaius grandifolius, then known as Bletia

Tankervilleæ, Dendrobiums nobile, densiflorum and fimbriatum, Oncidiums Papilio and altissimum, Saccolabium guttatum, Goodyera discolor, and several others, which both grew well and flowered freely.

The genus Dendrobium, now so extensively grown and so deservedly popular, came first in point of numbers, six species being represented, namely, D. calceolaria, D. densiflorum, D. fimbriatum, D. nobile, D. Pierardii, and D. speciosum.

Of Cattleya only three kinds were grown, C. labiata, whose re-introduction has recently caused so much discussion, the beautiful C. Mossiæ, and C. Loddigesii, which had then been known in various collections for a very long period.

Cypripedium was represented by two species, C. insigne and C. venustum. the two earliest, and for a long time the only, species in cultivation.

Four species of Oncidium were grown, the Butterfly Orchid, O. Papilio. O. flexuosum, O. altissimum, and O. pubes, none of which were then very recent introductions, and the two last probably more common then than now.

The only two Odontoglossums were O. cordatum, and the then recently-introduced O. grande.

Epidendrum was represented by three species, the curious shell-like E. cochleatum, E. verrucosum, and E. aurantiacum, which had been introduced from Guatemala some time previously.

There were two *Zygopetalums*, *Z.* Mackayi and *Z.* maxillare, both introduced long before.

The Stanhopeas, which succeeded better under the warm treatment than many others, were four in number, S. grandiflora, S. insignis, S. oculata, and the large-flowered and handsome S. tigrina.

Two Lælias only were grown, namely L. anceps and L. albida.

The two Gongoras were G. atropurpurea and G. maculata, besides which Acropera Loddigesii, which has since been referred to Gongora, must be mentioned.

Brassia was represented by three species, B. caudata, B. Lanceana, and B. maculata.

The Aërides group was represented by Aërides odoratum, Saccolabium guttatum, Sarcanthus rostratus, Vanda teres and V. Roxburghii, and Angræcum eburneum, which also like the warm treatment.

The remaining species were, Bifrenaria Harrisoniæ (then called Maxillaria Harrisoniæ), Bletia hyacinthina, Brassavola cucullata, Broughtonia sanguinea, a really handsome Orchid when it flowers well, Calanthe veratrifolia, Catasetum Hookeri, Goodyera discolor, Maxillaria picta. Miltonia candida, Peristeria elata, the Dove Orchid, Phaius grandifolius. and Phalænopsis amabilis, introduced from the Philippines not long before.

The above were the principal species then cultivated at Shrubland Hall,

but there were a few others of less importance. Many larger collections were then in existence, as for some time previously large importations had been continually arriving, and more rational methods of treatment were being gradually discovered and adopted. Many Orchids were then grown which are seldom seen at the present day, their places having been taken by showier things.

Had Beaton lived a few years later it is probable that he would have been as enthusiastic a hybridiser of Orchids as he was of bedding Pelargoniums, in which connection his name will long be remembered.

BEATONIAN.

HYBRID ODONTOGLOSSUMS.

THE genus Odontoglossum, so deservedly popular in gardens, has proved somewhat perplexing as regards its nomenclature. Several of the most popular species are not only very polymorphic, but seem to be connected by a series of intermediate forms, which obscure their natural limits. The beautiful Odontoglossum crispum, for example, is connected in this way with O. gloriosum, O. luteopurpureum, and O. Lindleyanum, three quite different species which, *a priori*, it would seem impossible to confuse. And the same feature presents itself in other cases. After making due allowance for a certain amount of polymorphism in the species themselves, we are driven to the conclusion that these intermediate forms are genuine natural hybrids, and have arisen through the intercrossing of the species by insect agency.

The first of these intermediate forms appeared as long ago as 1867, in an importation made by Messrs. Hugh Low and Co., of Clapton. It was described by Reichenbach as O. × Andersonianum, and its relations to O. crispum and O. gloriosum were duly pointed out. Other forms successively came to light, slowly at first, but afterwards more rapidly, as the importations increased in number and quantity. At the present day they form a very numerous class, and are represented in almost every collection. A large number of them have received specific names, with the result that the nomenclature of the genus has been thrown into considerable confusion.

Difficult as they undoubtedly are, these intermediate forms are worthy of careful study, with a view to the clearing up of their origin and parentage, which is still a matter of considerable uncertainty. Hitherto they have proved very difficult to deal with. Some of the forms have been spoken of as "confluent in series," and the Messrs. Veitch, in their *Manual of Orchidaceous Plants*, have placed several of these acknowledged

hybrids as varieties of the species they most nearly resemble; a plan, as they well remark, "by no means free from objection."

For several years I have made a study of these intermediate and doubtful forms, whenever the opportunity presented itself, and as numerous inquiries are continually being made on the subject, it seems desirable to place the results of my observations on record.

In 1874, when Odontoglossum × Andersonianum first appeared, comparatively little was known about hybrid Orchids, as the number of artificial ones which had reached the flowering stage could almost be counted on the fingers of both hands, as has been recently pointed out in these pages. At the present time, however, not only has our knowledge of the subject generally been enormously increased, but the origin of two supposed natural hybrid Odontoglossums has been demonstrated by actual experiment, and the subject may therefore be said to have passed beyond the stage of mere speculation.

From an attentive observation of the numerous Odontoglossums in cultivation, I have arrived at the conclusion that, in the majority of cases, it is possible to separate hybrid forms from genuine species and their varieties, and that where this is not the case it is only because of the imperfect *data* at hand. It is fortunate that such is the case, for it is the first real step to the solution of the problem. It is not an easy matter to lay down any absolute rules on the subject, but the two groups are so essentially distinct in their origin that a very few considerations will serve to make the matter clear.

A species, of whatever kind, has always a definite geographical area, over which the individuals which compose it are distributed, more or less continuously or disconnectedly according to circumstances. Taking this area as a whole, the individuals are generally very numerous, and everywhere they bear so strong a resemblance to each other that they can generally be recognised as belonging to the same species. Moreover the present distribution, however wide, must be ascribed to gradual diffusion from some original birthplace. Orchids, generally speaking, are rather local in their distribution; but there are exceptions, and it has been repeatedly observed that widely diffused species are the most variable. Another noteworthy fact is that the most closely allied plants are usually found in different localities. The explanation is very simple.

When a species becomes widely diffused, it almost invariably comes under the influence of changed conditions, and as every part of an organism is closely related to its complex conditions of life, a corresponding change in the plant necessarily takes place. Hence variations arise, which in time become more marked, and are called geographical varieties, and successively subspecies, and species. An extension of the process, together with the extinction of intermediate forms, results in the formation of

genera, and groups of higher rank. These considerations help us to understand the difficulty in certain cases of defining the limits of species, and also why the most closely allied plants occur in different localities.

Two or more allied species may be found growing together in one spot, but generally speaking they have nearer relations elsewhere, and even when this is not the case there are strong reasons for believing that they originated separately, and were afterwards brought together. Probably no instances could be found of two species occupying absolutely identical geographical areas. Their boundaries are hardly ever conterminous, or, in other words, they may grow together in certain localities, but there are others where they grow separately, or in different combinations. These several considerations help us materially to understand the phenomena of natural hybridism.

Natural hybrids only originate where two or more allied species grow in sufficient proximity to each other for the pollen of one species to reach the stigma of the other. In the case of Orchids we know how this is effected by insect agency. The species must also have retained their congenital affinity, or, in other words, be capable of hybridising together. Wherever these conditions obtain, natural hybrids may occur. In most cases they are found growing with the parent species. It may not always be the case, for the light seeds of Orchids may be carried some distance, though we have very little evidence of its taking place on any extensive scale. Were it otherwise the species would be more generally diffused. And in any case uncrossed seed would be likely to be carried to the same distance, and to germinate, if placed under favourable conditions.

Natural hybrids, like those obtained artificially, almost invariably show a distinct combination of the characters of the two parent species, which may usually be traced on careful examination. Sometimes the characters of one parent preponderate over those of the other, and it becomes a more difficult case to identify the second one, but generally speaking hybrids may be said to bear the stamp of their origin in their faces.

Another fact respecting them is that, compared with the parent species, they are very rare. Sometimes a single individual appears in an importation, and is not recognised until it flowers; in other cases there may be several. In a few cases the individuals are numerous, because the cross has been effected over and over again, and large importations of plants have been made.

Again, they are usually very variable. From the very first it has been observed that it was a rare occurrence for any two of them to be identical, though apparently derived from the same two species, and sometimes they have received different names. This variability is well known in the case of artificial hybrids.

R. A. R.

(*To be continued.*)

CYPRIPEDIUM INSIGNE VAR. SANDERIANUM.

Among the most distinct of the numerous varieties of the popular Cypripedium insigne, so highly valued as an autumn and winter-flowering plant, is the one here figured, which was introduced by Messrs. F. Sander and Co., of St. Albans. This firm has been particularly successful in the importation of this species. First they introduced that most charming yellow variety Sanderæ, named after Mrs. Sander, now the most valuable Cypripedium known. Then came Macfarlanei, nearly similar in colour but different in

Fig. 10. CYPRIPEDIUM INSIGNE VAR. SANDERIANUM.

shape, and now comes another unspotted form, quite different in colour. It is of a light yellowish-green, with darker green reticulated nerves, and a broad white border to the dorsal sepal, as shown in our illustration. It forms a very effective contrast with the other varieties of this useful plant. There is a good specimen in the collection of Baron Sir Henry Schröder, of The Dell, Egham, which produced several flowers in January last, one of which, kindly sent for the purpose, is here reproduced from a photograph.

LÆLIA TENEBROSA.

A VERY handsome Lælia has been known in gardens for the last few years under the name of L. grandis tenebrosa, whose correct nomenclature remains somewhat unsettled, and as its flowering season is now rapidly approaching it seems desirable to add a few words respecting it. My first acquaintance with it dates from May, 1889, when a single flower from the collection of H. Tate, Esq., of Allerton Beeches, Liverpool, was sent by the Liverpool Horticultural Company, as a variety of L. grandis. Then it came from Mr. A. H. Grimsditch, of Clayton Square, Liverpool, with the information that it was introduced by Senor Travassos. M. Binot also introduced it in 1889, and two or three other firms have since obtained it, as it now appears, from Bahia. It was distributed in gardens under the name of L. grandis tenebrosa, in allusion to its dark colours. It is now evident, however, that the plant is not a variety of L. grandis, but a distinct species, which may therefore bear the above name. L. grandis has smaller flowers, with nankeen-yellow, very undulate sepals and petals, and a white lip, beautifully veined throughout with radiating rose-purple veins; while L. tenebrosa has larger flowers, with broader and flatter sepals and petals of a bronze or almost coppery hue, and a deep purple lip with a lighter margin. These differences are quite constant, and it is evident that the two plants are distinct, though allied species. Both are very handsome.

Lælia tenebrosa, Rolfe.

L. grandis var., Rolfe in *Gard. Chron.*, 1889, i. p. 683.

L. grandis tenebrosa, Hort., Rolfe in *Lindenia*, vii. p. 7, t. 290; *id.*, in *Gard. Chron.*, 1891, ii. p. 126; *Orchidophile*, 1891, p. 369, with plate; *Reichenbachia*, ser. 2, vol. ii., p. [illegible] t. 33.

R. A. R.

THE HYBRIDIST.

DENDROBIUM × NIOBE.

AT last we have a hybrid from Dendrobium tortile, and a handsome one too. It was exhibited by Messrs. James Veitch and Sons, at a meeting of the Royal Horticultural Society, on April 11th last, and received an Award of Merit. Mr. Seden was the raiser, and used D. nobile as the pollen parent. The pseudobulbs are stouter than in D. nobile, the pedicels are $2\frac{1}{4}$ inches long, and the sepals and petals slightly twisted, all of which characters are distinctly derived from the mother plant. The flowers are bright rose-purple, the petals $1\frac{3}{4}$ inches long by $\frac{7}{8}$ths broad, and the lip with a deep maroon disc, as in the pollen parent. In many respects it recalls a deeply-coloured D. nobile nobilius, though with the differences above pointed out. The plant bore seven flowers on four racemes.

Cypripedium × Melanthus.

This hybrid owes its descent to the crossing of Cypripedium Hookeræ with the pollen of C. Stonei. Mr. Seden was the raiser. The leaves are distinctly tessellated, and the scape 16 inches long, and at present one-flowered. The dorsal sepal has almost the shape of C. Stonei, but suffused with olive-green, and the stripes less distinct. The petals are 3½ inches long, broader than in C. Stonei, and much darker, as the yellow-green ground is almost wholly suffused with bright purple-brown, and with numerous small spots. The lip is 2¼ inches long, veined with light brown on a paler ground, and thus it resembles the pollen parent in this organ also. The staminode is nearly circular, slightly concave, and hairy near the margins. The influence of the seed parent is best seen in the foliage, though in the flower it can also be traced. It will probably improve as the plant becomes stronger.

Cypripedium × Paulii.

This is a rather curious hybrid, which has been raised in the collection of John C. Bowring, Esq., Forest Farm, Windsor Forest, from C. × selligerum majus, crossed with C. × Harrisianum. Its descent may be thus expressed :—

C. villosum ♀. C. barbatum ♂.	C. × Harrisianum ♂	C. × Paulii.
C. barbatum ♀. C. philippinense ♂.	C. × selligerum ♀	

It will thus appear that, although both parents are themselves hybrids, the offspring has fifty per cent. of the blood of C. barbatum in it, and twenty-five each of C. villosum and C. philippinense. The scape bears two large flowers, which have much of the character of C. × Harrisianum ; but the dorsal sepal is narrower, and has a curious twist. It is dedicated to Mr. Paul, Mr. Bowring's gardener.

Cypripedium × Murillo.

A hybrid raised by M. Charles Vuylsteke, Loochristy, near Ghent, from C. Boxalli atratum ♀ and C. Argus ♂. Thus it is derived from the same two species as the one called C. × Dibdin (p. 118).—F. Desbois in *Gardeners' Chronicle*, Feb. 11th, p. 162.

Cypripedium × Germinyanum violaceum.

A hybrid raised by M. Charles Vuylsteke, of Loochristy, near Ghent,

from C. villosum and C. hirsutissimum. It would appear to be a fine form of C. × Germinyanum. It is described under the name of C. villosum violaceum, which we venture to amend.—F. Desbois in *Gardeners' Chronicle*, Feb. 18th, p. 195.

Dendrobium × Rubens.

A very handsome hybrid, derived from D. × Leechianum ♀ and D. nobile nobilius ♂, which therefore contains three-fourths blood of D. nobile. It is described from the collection of Mr. J. Cypher, Queen's Road Nursery, Cheltenham. It is a free-grower, and very floriferous, and combines the characters of its two parents.—O'Brien in *Gardeners' Chronicle*, Feb. 25th, p. 226.

CALENDAR OF OPERATIONS FOR MAY.

By W. H. White, Burford, Dorking.

It is a great pleasure and satisfaction to look through a collection of Orchids at the present time, and to notice how quickly these plants have responded to the increased sun-heat which they have experienced during March and April. The majority of the plants in each division will now be growing and rooting freely, and should receive careful treatment as regards watering. There can be no doubt that rain-water is the best and most natural, particularly for syringing purposes. Where reservoir water is used it generally leaves a white sediment on the leaves and bulbs, which not only stops up the pores and prevents the plants from obtaining atmospheric nourishment, but also appears very unsightly. It is therefore of great importance that every house should be furnished with a tank for the storage of large quantities of rain-water. During the summer months, when the supply is uncertain, it is not always advisable to rely wholly upon the inside quantity. Here we have a large tank outside, made expressly for collecting rain-water from the dwelling-house. The water is easily pumped into the tanks through a large garden-hose, and in times of drought I have found this extra supply exceedingly useful. It is not necessary that hot-water pipes should be laid through all the tanks in Orchid houses; but if the one in the East Indian house be provided with a three-inch hot-water pipe for the purpose of increasing the temperature of the water, with a valve outside the tank to properly regulate it, this will be sufficient. I do not advise the water to be heated, with the view of increasing humidity in the atmosphere, as I am fully convinced that this is injurious to the plants, but only for watering and syringing purposes.

On watering days (Wednesdays and Saturdays), and at other times if required, we turn the heat on the tank early in the morning, and in summer immediately the temperature is at 66° or 68° the valve is turned off. During the winter months 62° or 63° is sufficient. With water at these temperatures the whole of the inmates of the East Indian house are supplied. For the Cattleyas and other Intermediate house plants the temperature is reduced by several degrees, and of course colder water is used for Odontoglossums, Masdevallias, and all other cool-growing Orchids. With regard to syringing much may be said both for and against the practice. If it be done indiscriminately and without care, evil results will follow. Never syringe a plant that is suspended above others, or the water will drip into the growths of those underneath, and if not immediately removed many valuable plants may be ruined. Where the syringe is used with discretion some Orchids appreciate the operation immensely. When in full growth, such plants as Dendrobiums, Sobralias, Lælia anceps, Vanda teres, and many of the Cypripediums delight in a gentle sprinkling overhead early on a warm summer afternoon, but such Cypripediums as Lowii, Stonei, philippinense, and Selenipedium caudatum should not be syringed overhead, as the water will probably remain in the centre of the growths, causing decay and the loss of many leaves. Cypripediums should never be allowed to become dry at the root and should receive a thorough soaking as often as necessary. Cattleyas and Lælias of the elegans type require very careful watering, even during the growing season. It is frequently and easily overdone, especially when the plants are not properly potted. The majority of our Cattleyas receive a good watering about once a week, but less often in the case of those that are in large pots and have more material about their roots, while to those in small pots, and well rooted, water is given more frequently. Pleiones, Sobralias, Stanhopeas, Cœlogynes, Zygopetalums, and the tall-growing Epidendrums, should be watered frequently, and they will appreciate a soaking of weak liquid cow-manure once a week during the summer months. The cooler growing plants must be watered often enough to keep the sphagnum moss growing. Plants on blocks require much attention, and should be watered at least once a day during growth. As the young roots of Aërides are now in full activity, the amount of moisture both at the root and in the atmosphere must be largely increased. Damp down between the pots both morning and afternoon, using tepid rain-water in preference to any other, and as the plants re-establish themselves, more light may be given, by drawing up the blinds a little earlier in the afternoon than usual. This will prevent the growths from becoming drawn, and help to harden the plants, so that they may pass through their resting season without any great loss of foliage.

The Phalænopses may now be taken in hand. Those that require more root room should receive it at once, or if the material in which they are

growing, has become decomposed, it should be replaced with fresh. In removing the plants into larger baskets, great care must be taken in separating the roots from whatever they may have been clinging to, not to injure them. When well cultivated, few Orchids are more admired than these, and they certainly deserve all the care that can be bestowed upon them. For further cultural directions I cannot do better than refer the numerous readers of the ORCHID REVIEW back to page 80, where a description is given of the method adopted for their culture by Mr. W. H. Young, at Clare Lawn, East Sheen, which has been attended with great success. Among other plants that are grown to perfection at Clare Lawn, Cœlogyne pandurata may be mentioned. A splendid example was exhibited at the Royal Horticultural Society meeting on March 14th, which was deservedly awarded a Cultural Commendation. This beautifully grown plant, with its peculiar green and black flowers, was very attractive. I must admit that up to the present, I have failed to grow, or even to keep this Orchid in anything like respectable condition, for any length of time, but through the kindness of Mr. Young in giving me the following information, I hope in future to succeed. When the plant in question was first imported it was placed in an ordinary teak basket, with very little material to root into; the leading bulb quickly started to grow, and the young growth soon found its way over the side of the basket. Immediately the roots appeared at the base of the young growth, the plant, basket and all, was placed in a long and narrow teak basket, which was well drained. The material used was peat and moss in equal proportions, laid loosely over the crocks and well watered. The plant was placed on the open lattice stage in the stove, amongst foliage plants, and kept moist at all times, when the roots speedily took possession of the new compost, and the plant flourished luxuriantly.

A very pretty and interesting Orchid when in bloom is Phaius tuberculosus. Unfortunately it is often met with in a languishing condition. From my own observation the principal causes of failure has been neglect in keeping the plants free from insect pests. When once these obtain a footing low down in the young growths it seems almost impossible to completely eradicate them. Immediately the new growths commence to unfold their leaves, they must be thoroughly examined every day for thrips, and if any should make their appearance, keep the plants under strict supervision for a considerable time. No pains should be spared in getting rid of them, as if once neglected failure will be the result. Cleanliness is especially necessary in the cultivation of this plant, and when properly attended to in this respect, it is tolerably easy to grow. It may be grown in pots or shallow pans, two-thirds filled with drainage, over which place a thick layer of sphagnum moss, then a layer of mixed peat and moss, upon which the plants should be placed. Finally fill up to the rhizome with clean living sphagnum. A hot moist and shady corner of the East Indian house will

suit them, keeping the compost always moist, and during hot weather syringing overhead will be found beneficial in checking the increase of thrips and red spider. Large fleshy scale insects are very partial to this plant, but may easily be kept down by sponging the leaves over occasionally. But this must be done with care, because if the young foliage be rubbed hard it will probably be permanently injured.

The large ivory-white Cymbidium eburneum still holds its own among first-class Orchids, and is deserving of the best position in the coolest and shadiest part of the Intermediate house, where it may remain all the year round. Those plants that require more root-room should receive attention as they pass out of flower. The thick fleshy roots of this Orchid require a larger space to ramble in than is generally afforded, therefore it is necessary to use extra-sized, well-drained pots. Use a compost consisting of one half good turfy loam, the other half fibrous peat and moss, to which may be added a little leaf soil and broken crocks in sufficient quantities to keep the compost open, and allow a free passage for water. Instead of elevating the plant above the rim of the pot, keep the soil at least half an inch below it. During the growing season water must be freely given, and at other times sufficient to keep the roots moist, Cymbidiums do not appreciate dryness, either at the root or in the air, as it will cause loss of foliage, greatly to the disfigurement of the plants. The above remarks also apply to C. elegans, C. Mastersii, C. affine, C. aloifolium, C. ensifolium, C. chloranthum, and C. longifolium. But C. Lowianum does not require so large an amount of pot room as C. eburneum, and when properly potted and well cared for, this plant may remain undisturbed for many years, and will produce its long arching flower-spikes more freely when kept in a pot-bound condition. An occasional dose of weak liquid cow-manure will greatly benefit the plants when throwing up their flower-spikes. C. giganteum, C. pendulum, and C. Hookerianum, should also be treated as advised for C. Lowianum. C. Devonianum produces its pendulous racemes from the base of the young growths, and therefore basket culture will best suit its requirements. All the above-mentioned Cymbidiums grow well in the same house with C. eburneum.

The Anguloas will now be growing and fast sending up their flowers, which, when fully developed are very attractive and interesting. These plants may be re-potted either immediately they commence to grow, or when they have done flowering. Being free-rooting plants they should have considerably more material to grow in than the majority of Orchids require. Fill the pots about half way up with clean broken crocks, then cover the drainage with a layer of moss, using as a compost two parts of peat, one of good fibrous loam and the remainder chopped sphagnum. During active growth, and until the bulbs are thoroughly matured, give plenty of

water, and an occasional dose of weak liquid manure will be beneficial. When growth is completed, gradually diminish the supply of moisture at the root, just enough being given to prevent undue shrivelling. Anguloas are Intermediate house plants, and a cool and shady position will suit them. Sponge over the large leaves frequently to keep them free from scale and red-spider.

Where many different species of Cœlogyne are grown, some or other will be in bloom throughout a considerable period of the year, and therefore they will not all require re-potting at the same time. The best time for this operation is when they are starting into new growth, and the ordinary compost of peat and moss, in equal proportions, should be used. During the growing season, syringing the plants slightly overhead after a hot day will help them to make clean, strong and healthy growths. Cœlogynes appreciate plenty of light but not sunshine, and abundance of water when growing. During their short period of rest the compost should be kept just moist. The Cattleya or Intermediate house is the proper place for the following Cœlogynes:—C. barbata, C. elata, C. corrugata, C. glandulosa, C. conferta, C. ocellata, C. speciosa, C. fuliginosa, and C. Sanderiana. I used to grow C. Massangeana and C. tomentosa in the East Indian house, but I find they grow stronger and bloom more freely when placed in a lower temperature with the varieties just mentioned. Last year C. Massangeana produced fourteen new bulbs, and flowered freely for several months, and now it is pushing up twenty strong growths. C. Dayana also does well hanging up in the Cattleya house, but those that come from the hot lowlands, such as C. asperata, C. peltastes, C. Cumingii and C. Foerstermanni, should be grown in the hottest house, with partial shade.

Such plants as Dendrobium infundibulum, and its variety Jamesianum, Lælia harpophylla, Oncidium bifrons, Cryptophoranthus Dayanum, Masdevallia tovarensis, M. ephippium, M. Schlimii, and those of the Chimæra section that have been wintered in the Intermediate house, may now with safety be removed to their summer quarters in the cool house. The temperature of each division may now be increased by night, the East Indian to 65°–70°, the Intermediate or Cattleya house to 60°–65°, the Mexican to 60°, and the cool or Odontoglossum house to 50°–55°. The higher temperature should be maintained only when the external air is about 50°; when 40° the lower is preferable, always allowing a decrease of several degrees by the morning. The day temperatures must rise from 5° to 10° above this, as maintained by fire heat, and a rise of several degrees more by sun-heat will be beneficial, with the higher temperatures, increased humidity in the atmosphere will be necessary. On all bright days keep the floors and stages well supplied with moisture, damping them well both morning and evening. Gradually increase the amount of air whenever possible and shade the various houses as advised in the previous Calendar.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

CATTLEYA IRICOLOR, Rchb. f. (See p. 63 of our February issue.) A reference to the Peruvian Amazons as the home of C. Rex, Lindl., is evidently a slip for C. luteola, Lindl., for the locality of C. Rex has not been divulged, and Lindley is not its author.—t. 7287.

SATYRIUM CORIIFOLIUM, Sw., var. MACULATUM, Hook. f. A variety with orange-yellow flowers spotted with red, which flowered with H. J. Elwes, Esq., of Colesborne, Gloucestershire, in August last. A note by Mr. Bolus is cited that S. coriifolium is one of the commonest species in the Cape Peninsula, and that the insatiable flower gatherers of Cape Town carry off from the Cape Flats in spring large bunches of the flowers.—t. 7289.

BULLETINO DELLA R. SOCIETÀ TOSCANO DI ORTICULTURA.

CYCNOCHES PENTADACTYLON (from *Journal of Horticulture*).—February, p. 44, t. 2.

LÆLIO-CATTLEYA RIDOLFIANA. A hybrid from Lælia purpurata Aurorea ♀ and Cattleya Mossiæ picta ♂, and thus practically a variety of L. × Canhamiana.—March, p. 72, t. 3.

THE GARDEN.

CYCNOCHES WARSCEWICZII, Rchb. f. A reduced sketch of the plant which produced flowers of both sexes with Mr. W. Bull, F.L.S., some years ago.—March 18th, p. 217.

DENDROBIUM PHALÆNOPSIS, Fitzg., var. SCHROEDERIANUM. A plate showing the ordinary form and a light variety, from Messrs. F. Sander and Co.'s establishment.—March 25th, p. 236, t. 902.

CYPRIPEDIUM CHAMBERLAINIANUM, O'Brien, and var. EXCELLENS. The variety has a paler dorsal sepal and deeper brown markings.—April 15th, p. 304, t. 905.

GARDENERS' CHRONICLE.

CŒLOGYNE SANDERÆ, Kränzl. (*vide infra, Reichenbachia*).—March 25th, pp. 360, 361, fig. 52.

LÆLIA × VITELLINA, O'Brien. A hybrid raised in the collection of Baron Sir Henry Schröder, possibly from L. harpophylla and L. Perrinii.—March 25th, p. 365, fig. 53.

CALYPSO BOREALIS, Salisb. A pretty little terrestrial Orchid, widely diffused in the northern hemisphere. It recently flowered with H. J. Elwes, Esq., of Colesborne, Gloucestershire.—April 8th, p. 421, fig. 61.

JOURNAL OF HORTICULTURE.

TRICHOGLOTTIS COCHLEARIS, Rchb. f. A curious little species from Sumatra, introduced some years ago by Messrs. Veitch.—March 23rd, p. 233, fig. 47.

CIRRHOPETALUM PICTURATUM, Lodd. A Burmese species, re-introduced by Messrs. Hugh Low and Co.—March 30th, p. 253, fig. 50.

ODONTOGLOSSUM × RUCKERIANUM, Rchb. f. var. SPLENDENS. A handsome variety in the collection of Sir Trevor Lawrence, Bart.—April 6th, p. 269, fig. 53.

AËRIDES VANDARUM, Rchb. f.—April 13th, p. 293, fig. 56.

CŒLOGYNE SANDERÆ, Kränzl. (*vide infra, Reichenbachia*).—April 20th, p. 313, fig. 59.

LINDENIA.

BATEMANNIA COLLEYI, Lindl. A monotypic genus named in honour of James Bateman, Esq., of Knypersley, an ardent collector and successful cultivator of Orchids. It is a native of Guiana, and was named after Mr. Colley, Mr. Bateman's collector. Other so-called Batemannias have been erroneously referred to the genus.—t. 365.

PHALÆNOPSIS LUEDDEMANNIANA, Rchb. f. A well-known Philippine species.—t. 366.

LÆLIO-CATTLEYA × AMŒNA, Bleu, var. DELICATA, Bleu. A hybrid raised by M. Alfred Bleu, of Paris, from Cattleya Loddigesii ♀ and Lælia Perrinii ♂.—t. 367.

LYCASTE MACROBULBON, Lindl., var. YOUNGII, Rolfe. A variety of a very rare yellow-flowered Lycaste, which has been almost or quite lost sight of for many years.—t. 368.

ORCHIDOPHILE.

CYPRIPEDIUM × CHARLES GOUDOIN. A hybrid between C. × Harrisianum and C. insigne Chantini, from the collection of M. Jolibois, of Luxembourg.—November, 1892, p. 337, fig. 1.

CYPRIPEDIUM × JOSÉPHINE JOLIBOIS. Derived from the same seed pod as the preceding, but the leaf is green, not tessellated.—*l.c.*, fig. 2.

CYPRIPEDIUM × MADAME BARBEY. A hybrid between C. Lawrenceanum and C. tonsum, from the same collection as the two preceding. All are represented on the same plate.—*l.c.*, fig. 3.

CATTLEYA AMETHYSTOGLOSSA, Lind. and Rchb. f.—December, p. 369.

SACCALABIUM CŒLESTE, Rchb. f.—January, 1893, p. 17.

REICHENBACHIA.

The second part of Volume II. of the second series contains:—

CYMBIDIUM LOWIANUM, Rchb. f.—p. 11, t. 53.

ONCIDIUM LOXENSE, Lindl. A remarkable and handsome species which inhabits the moisture-laden woods of the Andes of Ecuador, in the temperate region, at 6,000–9,000 feet elevation. The inflorescence is sometimes seven feet long, the flowers not numerous, with green and brown sepals and petals and a large orange lip. It was introduced to cultivation by Messrs. F. Sander and Co., of St. Albans.—p. 13, t. 54.

CATTLEYA × HARDYANA, Williams. A well-known natural hybrid between C. Warscewiczii and C. Dowiana aurea.—p. 15, t. 55.

CŒLOGYNE SANDERÆ, Kränzl. A handsome species from Upper Burma allied to C. barbata and C. elata, of the section Proliferæ. The flowers are white, with the disc of the lip orange and the keels fringed with long brown hairs. It is dedicated to Mrs. Sander.—p. 17, t. 56.

ORCHIDS AT GHENT.

THE Ghent Quinquennial Exhibition, held from April 16th to 23rd, we are pleased to record, was a great success. The Orchids, which were arranged in the great hall, formed one of the foremost features of the show, and the principal groups were exceedingly good. We may point out some of the principal features, though space cannot be afforded for anything like a complete report.

The Gold Medal given by his Majesty the King of the Belgians for the best collection of one hundred exotic Orchids was won by M. Jules Hye-Leysen, of Coupure, Ghent, with a superb group, containing many very fine specimens. The second prize Gold Medal fell to M. G. Warocqué, of Mariemont, who staged a magnificent collection, second only in point of merit to the one which gained the coveted trophy.

M. Alfred Van Imschoot, of Mont-St.-Amand, secured the Gold Medal offered for the largest number of distinct species of Orchids. It was a most interesting group, containing over two hundred and twenty species.

The prize for seventy-five exotic Orchids went to M. Charles Vuylsteke, of Loochristy, who staged a brilliant group; and for the best thirty to M.

Pauwels, of Antwerp. For fifteen exotic Orchids, M. de Smet Duvivier, and, among the amateurs, Dr. Capart, of Brussels, secured the prizes.

M. Edward Pynaert van Geert, of Ghent, carried off the Gold Medal for forty Cypripediums and Selenipediums, with a very fine group; the second prize going to M. J. Moens, of Lede. For the best twenty of the same M. Pauwels was first.

For the best six hybrid Cypripediums, the first prize was won by Messrs. Vervaet & Co., of Mont-St.-Amand; who also secured the prize for the best hybrid Cypripedium not yet in commerce, with C. × Huybrechtianum. Messrs. Pitcher and Manda, of Swanley, Kent, obtained the second prize in both classes, in the latter with one called C. × Greyanum.

For ten Cattleyas and Lælias, M. de Vincke-Dujardin was first; also for six Vandas. For thirty Odontoglossums, M. Charles Vuylsteke carried off the honours; for twelve Dendrobiums, M. Alfred Van Imschoot; and for fifteen Odontoglossums, M. G. Warocqué among the amateurs, and M. A. Peeters among nurserymen, secured the awards. For the best six Odontoglossum crispum, Messrs. Vervaet & Co. were first, with a splendid group.

In the classes for single specimens, M. G. Warocqué had the best Cattleya, C. Mendeli; M. de Vincke-Dujardin, the best Dendrobium and Lycaste, a grand D. nobile, and Lycaste Skinneri alba, with nine flowers. M. R. Lemoinier, of Lille, carried off the first prize in each of the following four classes, the best Vanda (V. gigantea); Cypripedium (C. × Lemoinieri); Odontoglossum other than O. crispum (O. Edwardii); and the best Oncidium. M. A. Van Imschoot obtained the prize for the best Cymbidium, with a fine C. Lowianum, and also secured the Medal for a single exotic Orchid remarkable for good culture and profuse flowering, with a beautiful specimen of Ansellia africana with sixteen spikes. M. de Smet Duvivier obtained the Medal for the best Odontoglossum crispum, with a superb specimen. Messrs. Vervaet & Co. obtained the first prize for an Orchid of recent introduction not in commerce, with the clear yellow O. Masereelianum. The Silver Medal for the best new hybrid Orchid was obtained by Messrs. Heath and Son, of Cheltenham, with their charming Odontoglossum × excellens Tresederianum.

For a collection of terrestrial Orchids there was a single exhibitor, M. C. G. van Tubergen, jun., of Haarlem, who staged a varied and pretty little group.

Probably the most remarkable exhibit in the whole show was the noble and beautiful white Eulophiella Elisabethæ (a new genus of Orchids, recently described in the *Lindenia* by Mr. Rolfe), staged by Messrs. Linden, L'Horticulture Internationale, Brussels.

We have necessarily been obliged to omit many exhibits altogether, and most of the details. A few classes were not represented, and others

only poorly so, but in the majority of cases the exhibits were very fine; and the Odontoglossums exceptionally so. Altogether the show was a great success.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THERE was a fine display of Orchids at the Drill Hall, James Street, Victoria Street, Westminster, on March 28th, when a great many plants were submitted to the Orchid Committee.

From the collection of the President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), came the small yellow-flowered Angræcum odoratissimum, which received a Botanical Certificate, and the brilliant Cochlioda Noezliana, which received an Award of Merit. Besides these were Dendrobium × Venus (D. nobile ♀ × D. Falconeri ♂), D. × micans (D. Wardianum ♀ × D. lituiflorum ♂); the white D. superbum Burkei, the deep purple D. s. anosmum, and D. cretaceum.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), exhibited Dendrobium × Sibyl (D. bigibbum ♀ × Linawianum ♂) which had large deep purple sepals and petals, white at the base, the purple-tipped lip having a white zone round a yellow throat, on each side of which was an orange eye. The plant, which seemed to bear little trace of D. bigibbum, received an Award of Merit. D. × Bryan (D. luteolum ♀ × D. Wardianum ♂) is a fine hybrid, worthy of the First-class Certificate awarded it. There were ten large creamy flowers, the lips of which were striped with brown at the sides.

Earl Cowper, Panshanger, Herts (gr. Mr. I. Fitt), sent blooms of Vanda suavis.

A silver Banksian medal was awarded Philip Crowley, Esq., F.L.S., Waddon House, Croydon (gr. Mr. King), for a group of well-grown Ada aurantiaca, Cypripedium villosum, Cattleya Lawrenceana, Sophronitis grandiflora, &c.

H. J. Elwes, Esq., F.R.H.S., Colesborne, Andoversford, sent an interesting basket of hardy Orchids, among which were the dark velvety Ophrys speculum, the creamy Orchis tridentata, Brownleea cœurlea, and the purple Calypso borealis, which latter received a Botanical Certificate.

A plant of Dendrobium Devonianum full of bloom came from Thomas Gabriel, Esq., F.R.H.S., Elmstead, Leigham Court Road, Streatham (gr. Mr. H. Guyatt).

C. J. Ingram, Esq., F.R.H.S., Elmstead House, Godalming (gr. Mr. Bond), exhibited Cypripedium × compactum (C. Sedeni candidulum ♀ × C.

calurum ♂) with a deep crimson lip, and C. × T. W. Bond (C. × Swanianum ♀ × C. hirsutissimum ♂), a monster hybrid which received an Award of Merit. It somewhat resembles a large C. Curtisii, but with heavily spotted petals, the tips of which have the characteristic colouring of C. hirsutissimum.

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester, showed a fine plant of the chaste white Dendrobium Wardianum album, which was awarded a First-class Certificate.

Gustav R. le Doux, Esq., F.R.H.S., Langton House, E. Molesey (gr. Mr. Bowyer), sent a fine form of Odontoglossum Andersonianum, O. triumphans, Cypripedium barbatum majus, and Cattleya intermedia Faustiana, the sepals and petals of which bore faint interrupted lines of purple on a creamy ground, the side lobes of the deep crimson-purple lip being pure white.

F. W. Moore, Esq., F.R.H.S., sent a spike of the new orange Physosiphon Moorei.

From Baron Sir Henry Schröder's garden, The Dell, Staines (gr. Mr. Ballantine), came a strong specimen of Lælia × vitellina in bloom, Odontoglossum luteopurpureum Amesianum with a fine spike of clear soft yellow flowers, and O. Pescatorei Schrœderianum with white flowers blotched with purple.

H. Shaw, Esq., Stamford House, Ashton-under-Lyne (gr. Mr. Cliffe), sent blooms of a fine Dendrobium Wardianum.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited a fine Dendrobium × splendidissimum Statterianum; D. nobile Storeri, with white purple tipped segments, and a creamy lip having a deep crimson eye; D. heterocarpum, and the Annamese Cypripedium Exul.

From J. W. Temple, Esq., F.R.H.S., Leyswood, Groombridge, Tunbridge Wells (gr. Mr. Bristowe), came the pretty Lycaste plana Templæ, having clear crimson blotches on the petals and lip; also flowers of Cymbidium eburneum, and Cypripedium hirsutissimum.

Walter C. Walker, Esq., F.R.H.S., Percy Lodge, Winchmore Hill, N. (gr. Mr. Cragg), exhibited Odontoglossum Andersonianum and Cypripedium Boxallii.

Reginald Young, Esq., F.R.H.S., Fringilla, Linnet Lane, Sefton Park, Liverpool, sent some very fine blooms of Odontoglossums, Cattleyas, and Cypripediums.

Messrs. Heath and Sons, Cheltenham, obtained a Cultural Commendation for a strong plant of Odontoglossum × excellens, bearing nineteen large white blooms, which were tipped with light yellow and blotched with red. The plant was exhibited as O. × Tresederiana and was said to have been raised from O. Pescatorei Veitchii ♀ × O. triumphans ♂.

Epidendrum varicosum came from Messrs. F. Horsman and Co., Colchester.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., contributed a charming group in which were Cypripedium × polystigmaticum, Oncidium Sarcodes, O. lamelligerum, Gongora maculata, Ada aurantiaca, and several Odontoglots, chiefly noticeable being O. Pescatorei Lewisii with a cuneate purple blotched lip.

Messrs. Pitcher and Manda, Hextable, Swanley, received an Award of Merit for Cattleya Lueddemanniana, Manda's var., the flowers of which were very large, well shaped, and with a deep crimson orbicular lip. Cypripedium × macropterum (C. Lowii ♀ × C. superbiens ♂), C. × Greyanum (C. ciliolare ♀ × C. Druryi ♂), C. × orphanum (C. Druryi ♀ × C. Argus ♂), and several C. caudatum, &c., were in the group.

The splendid collection from Messrs. F. Sander and Co., St. Albans, received the award of a Silver Flora medal. Chiefly noticeable were plants of the lilac Odontoglossum Cervantesii Morada, O. Pescatorei "Model," O. Reichenheimii, Cattleya Schrœderæ, C. dolosa, C. Lawrenceana, Oncidium ampliatrum with large golden trusses, O. fuscatum, Spathoglottis aurea, Dendrobium Brymerianum, and D. Dalhousieanum. A fine Restrepia antennifera, Cypripedium × Burberryanum (C. Boxallii ♀ × C. × plunerum ♂), a trilabiate form of C. Chamberlainianum, and Lælia crispilabia with purple flowers, shown under the garden name of L. Lawrenceana.

Messrs. J. Veitch and Sons, Chelsea, exhibited Cypripedium × microchilum (C. niveum ♀ × C. Druryi ♂), which received an Award of Merit, and three plants of Dendrobium × Alcippe (D. lituiflorum Freemannii ♀ × D. Wardianum ♂) covered with purple flowers, the base of the segments being white.

At the meeting held on April 11th, there was also a good display of Orchids, though the amateur exhibitors were less numerous than usual.

The Right Hon. J. Chamberlain, M.P., Highbury, Moor Green, Birmingham (gr. Mr. H. A. Burberry), sent flowers of the very interesting natural hybrid Cattleya × guatemalensis var. Wischhuseniana, now called Epicattleya (see p. 134), which received an Award of Merit; also flowers of Cattleya Schrœderæ and Dendrobium × Nestor.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cooke), showed the rare Odontoglossum tentaculatum, and a good form of O. × Andersonianum (called O. hybrid Crawshay's var.), which received an Award of Merit.

The Rev. E. Handley, Royal Crescent, Bath (gr. Mr. Kerslake), sent a spike of a good form of Odontoglossum × Andersonianum, and Cattleya Lawrenceana ornata, a richly-coloured form with purple tips to the petals.

His Grace the Duke of Northumberland, Syon House, Brentford (gr. Mr. C. Wythes), exhibited three fine plants of the handsome

Cyrtopodium punctatum, to which an Award of Merit was given, also a fine plant of Miltonia flavescens, with nine spikes.

Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, showed a light-coloured and somewhat peculiar form of Cattleya Warscewiczii.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., staged an effective group, to which a Silver Banksian Medal was awarded. It contained several good forms of Cattleya Mendeli, a fine Odontoglossum polyxanthum, O. Hallii, Sophronitis grandiflora, Ada aurantiaca, and several other Orchids, including some Cypripediums.

Messrs. Hugh Low and Co., Clapton Nursery, also received a Silver Banksian Medal for a fine group, which included Phalænopsis grandiflora, and P. Lueddemanniana, Dendrobium superbum and others, several Odontoglossums, Cypripedium nivem, C. bellatulum, C. tonsum, etc.

Messrs. J. and R. Pearson, Chilwell, Notts, sent a spike of a fine white form of Odontoglossum Pescatorei.

Messrs. Pitcher and Manda, Hextable, Swanley, Kent, sent the handsome Selenipedium × grande atratum.

Messrs. F. Sander and Co., St. Albans, exhibited several fine forms of Cattleya Schrœderæ, Odontoglossum Kränzlinii, a dark spotted form of O. × elegans called selwoodensis, Vanda teres, and Dendrobium densiflorum var. Schrœderi.

Messrs. James Veitch and Sons, Chelsea, showed four hybrids, as follows:—Dendrobium × Niobe (see p. 146) to which an Award of Merit was given, Cypripedium × Melanthus (see p. 147), Selenipedium × Clymene (S. caricinum ♀ × S. caudatum Wallisii ♂), a variety of S. × Dominianum with the pale colour of the pollen parent.

Messrs. B. S. Williams and Son, Upper Holloway, staged an effective group, which included good examples of Cypripedium × Morganiæ and many other Orchids. A Silver Flora Medal was awarded.

REPLIES TO CORRESPONDENTS.

(An addressed Post Card will ensure a reply by post.)

H. J. R., Florence.—1. Lælio-cattleya Schilleriana (not L. elegans). Certainly a form of this variable plant. 2. Apparently Sobralia macrantha with unusually small flowers. It agrees in other respects.

W. H. C., Grimsby.—Many thanks for photograph. We will reply shortly.

D. W., Glasgow.—Note unavoidably postponed till next month.

H. A. B., Birmingham.—Many thanks.

A. and McA., Glasgow.—Odontoglossum × Wilckeanum elegans.

J. C., Manchester.—Odontoglossum × Andersonianum.

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VOL. I.] JUNE, 1893. [No. 6.

THE

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An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY

IN ALL ITS BRANCHES.

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All communications and Books for review, should be addressed :—The EDITOR OF THE ORCHID REVIEW, Lawn Crescent, Kew, and should be sent as early in the month as possible.

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THE ORCHID REVIEW.

VOL. I.] *JUNE*, 1893. [No. 6.

NOTES.

THE Great Annual Flower Show of the Royal Horticultural Society, held on May 25th and 26th at the Temple Gardens, was favoured by brilliant weather, and was a great success. The Orchids, as usual, formed one of the leading features, and a magnificent collection was brought together. It was feared that, owing to the long spell of hot, dry weather we have experienced, many of them would be past their best, which was happily not the case. A report appears on another page. Owing to the event occurring so near the end of the month we are obliged to go to press a little later than usual.

The Manchester Show, to which we alluded last month (p. 130), was also a brilliant success, and the display of Orchids at the Old Trafford Gardens on May 19th last, when the show opened, was one of the finest ever brought together in the North of England. The Royal Botanical Society of Manchester, and its able secretary, Mr. Bruce Findlay, may certainly be congratulated on their success.

The February and March numbers of the *Kew Bulletin*, issued as a double number early in May, contains another decade of new Orchids, of which particulars are given on a later page.

The Royal Horticultural Society will hold two meetings during June, at the Drill Hall, James Street, Victoria Street, Westminster, on the 6th and 20th, respectively, when the Orchid Committee will meet at 12 o'clock, noon.

On the former occasion a Silver-gilt Flora Medal is offered for the best seedling Orchid not exhibited previous to January 1st, 1893. The competition is open, and should be an interesting one.

The specimen of Cœlogyne Dayana exhibited by Baron Sir Henry Schröder, at the Temple Show, is probably the finest ever seen in Europe. On the present occasion it bore twenty-two spikes and over eight hundred flowers. The long pendulous spikes, each bearing nearly forty flowers, hung down all round the plant, and formed the most beautiful picture imaginable. It received the unusual award of a Silver Floral Medal and a First-class Certificate. Mr. Ballantine must be congratulated on his success with this plant.

This was not the only magnificent specimen in the collection. The plant of Cattleya Skinneri was also of remarkable size, and carried sixteen trusses of flowers, and there were several other very fine plants exhibited in the same collection.

Examples of good culture were everywhere apparent, and in several collections we observed large specimens in the most robust health, and perfectly wreathed with flowers, all of which shows the perfection to which modern Orchid culture has been brought.

There remain, however, a number of difficult subjects which no one yet seems to have succeeded in keeping in health for long together. Some of the species which are now successfully cultivated in various collections were formerly considered just as unmanageable, and a correspondent suggests that notes on these intractable species would be exceedingly acceptable. We hope that any of our readers who have succeeded with any of these difficult subjects will send us a note on the mode of treatment employed.

In some cases it may result from a difficulty in imitating the essential conditions under which they grow naturally, but we strongly suspect that it is quite as often due to ignorance of what to imitate. The success hitherto attained should only stimulate us to increased efforts for the future, and we are pleased to find a healthy appetite for more information on the subject, which we hope to be able to supply.

CYCNOCHES PENTADACTYLON.

It is interesting to record that this remarkable plant, which we figured at p. 73 of our March issue, has now produced a female flower. It was again exhibited by W. W. Mann, Esq., of Ravenswood, Bexley, at a meeting of the Royal Horticultural Society, on April 11th, with a raceme of male flowers and one female. The latter was larger and far more fleshy than the males, light green with some brown blotches, the column short and stout, with the usual wings of this sex, and the lip large, ovate, and very fleshy, instead of being reduced to five small teeth. This organ is remarkably diverse in the two sexes.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 112.)

In noticing the differences in the habit, shape, or forms of the same species caused by their surroundings, or by being separated by long distances from each other, I have not generally thought it necessary to give their varietal names, as such names are often applicable to individual plants only. It is more desirable to make the variety apparent by some peculiarity connected with it.

A striking instance of these peculiarities may be mentioned in the case of the well-known Aërides multiflorum (sometimes called A. affine). The first form, probably the type, is found in great quantities at Dehra-Dūn, below Mussourie. This was probably the first variety to come home. I scarcely ever see it now, except in very old collections. It grows far away from the hunting grounds of the professional collector, which will probably account for its not coming home of recent years. I collected it myself in 1874.

This plant is extra-tropical, growing in latitude 30° N., and of all the forms of this plant it is the easiest to grow, and the most lasting. It is very easily distinguished from all the other varieties; not only by the great length and leathery character of its leaves, but by their extremely ruddy colour. As might be expected from the dark colour of the foliage, the flowers are darker in colour than any other form. It is found in the lovely valley of the "Dūn," where there is a considerable amount of frost during the winter months. This, I think, accounts for the plant having acquired such a very thick and tough foliage. Its tropical allies would be quite unable to withstand the frost, as the foliage of all the tropical varieties is comparatively soft. In the same district grows the extremely rare Vanda cristata, and the rocky precipices rising out of the valley are covered with acres of Cœlogyne cristata, which will give English growers a very good idea of the sort of temperature this plant likes to grow in. I think it highly probable that Aërides multiflorum also grows in quantity on the rocks with the Cœlogyne, but this I could not verify, as the precipices were far too steep to climb, and had not the Cœlogyne cristata been a mass of bloom, I could not have told what it was growing on the rocks in such abundance.

Although Aërides multiflorum is found throughout the whole of the lower ranges of the Himalayas, and in Assam, we do not come to the second distinct type until we come to the hill country lying between Assam and Burmah. In the valleys of the Lushai Hills, near the source of the Kuladau River, grows what, in my opinion, is the most lovely and distinct of all the varieties. The plant is erect and compact in habit, with bright

green short leaves, and bears enormous branching spikes of flowers. This plant is very rare in cultivation, in consequence of collectors not often going into that part of the country. I recently saw a plant of this in Sir Trevor Lawrence's collection, the only one I have seen for some time in England.

A distance of nearly 700 miles separates this variety from the beautiful form so well known in our English Orchid collections, Aërides multiflorum var. Lobbii (sometimes called A. Lobbii). This is found in perfection from Moulmein to Mergui, and is a very distinct variety. The plant is of nice habit, with broader leaves than any of the other forms; the foliage is frequently, though not always, covered with brownish spots; and the flowers are very beautiful, and with large plants very difficult to beat. This plant, however, grows so much farther South than any of the other varieties that it necessarily rejoices in a much higher temperature, and a temperature which would suit the hill varieties would starve this plant.

There is one more distinct variety which requires notice, in addition to the fine ones above described. This is the form common to most of the small islands in the Bay of Bengal. In all the numerous islands I visited I found this plant in the greatest abundance, in huge masses hanging down from the trees overhanging the sea; these islands being wooded, as a rule, down to the water's edge. This variety is of drooping habit, not erect, the leaves are very small, and the flowers miserable, not even equal to those of Aërides maculosum of Bombay. Any one collecting this plant out of flower, and imagining he had got a good thing, would be very disappointed when he discovered what a worthless variety this is.

Why the island form of this Orchid is so small is a mystery. In no place is Aërides multiflorum more abundant than in these islands, and the temperature and rainfall are much the same as in the mainland in the same latitude, and yet one good plant of the variety Lobbii is worth a cart-load of the island form.

An exception should however be made in the case of those islands lying close to the mainland in Burma, in these the fine variety Lobbii is found, not the small variety.

(*To be continued.*)

ORCHIS PURPUREA, Huds.

This pretty little British Orchid, frequently known under its later name of O. fusca, Jacq., is now only known to grow in the county of Kent, so far as Britain is concerned. Three racemes have reached us for determination from Miss Ramsbottom, of Waterloo Crescent, Dover, and were gathered by the side of a wood in the neighbourhood of that place. It is a pretty little species, with dusky sepals and petals, and a four-lobed, pink lip spotted with purple; or occasionally this organ may have a nearly white

ground, as in one of the forms sent. When drying the species smells almost like new-mown hay. It is only found on chalk or limestone soils, and refuses to grow elsewhere. It was formerly reported from Berkshire, Surrey, Sussex, Middlesex, and even from Lincolnshire. The latter is probably an error, but there are good reasons for believing that years ago it grew in chalky soils much nearer to London than now, for we have seen authentic specimens from Box Hill, Surrey, gathered in 1842, and from Berkshire early in the present century. On the continent it is widely diffused, from France to Italy, Greece and Asia Minor, and northwards to Central Russia and Denmark, being common in various localities on chalk or limestone soil. It is sometimes confused with O. militaris, L., but is readily separated by the dusky sepals and petals, and the much broader front lobes of the lip.

CYCNOCHES LODDIGESII.

For a very long period this remarkable species, the original one of the genus, has been excessively rare in gardens, if not actually lost to cultivation; it is therefore an interesting matter to be able to record that during last month a plant at Kew produced a four-flowered raceme. The flowers, however, were not nearly equal in size and colour to those cultivated half a century ago, possibly because the plant is weak and not fully established—indeed, strong plants produce as many as six to eleven flowers, and possibly more. The genus was described by Dr. Lindley in 1832, from a single flower communicated by Messrs. Loddiges, of Hackney, the name being given in allusion to the column of the flower, which is long and gracefully curved, like the neck of a swan. It is a native of the woods of Surinam, and was sent in 1830 by Mr. J. H. Lance to Messrs. Loddiges, with whom it flowered in May, 1832, and again during the winter. The flowers are as large as those of C. chlorochilon, the sepals and petals olive-green, more or less barred with brown, and the lip whitish with numerous reddish-brown spots. They exhale a powerful Vanilla-like perfume in the morning, soon after the flowers expand. Other plants were afterwards sent by Mr. Lance to the Horticultural Society, where they flowered, as well as in some private collections.

It had not been in cultivation long before a remarkable freak was observed, as will be seen by the following note by Dr. Lindley: "In August, 1836, Mr. Willmer, of Oldfield, near Birmingham, sent me a specimen of a Cycnoches, which had broad petals, a short column, hooded and dilated at the apex, and a broad roundish lip, gibbous at the base, and with its stalk much shorter than the column. It was, however, destitute of scent, while Cycnoches Loddigesii has, as is well known, a delicious odour of Vanilla. I had no doubt of its being a distinct species, and called

it C. cucullata. But in the autumn of 1836, in the garden of the Horticultural Society, a plant of Cycnoches produced from the opposite sides of the same stem two racemes; those of one raceme were the well-known fragrant flowers of Cycnoches Loddigesii, and of the other the scentless flowers of the new C. cucullata."

Until quite recently the cause of this peculiarity remained a mystery, as we recently pointed out when speaking of C. pentadactylon, at p. 74, where some amusing remarks made by Lindley were cited. In the present instance C. cucullatum simply represents the female flower of the species, and it is interesting to note the difference in structure. The column, instead of being over two inches long, and very slender, as in the male flower, is less than an inch, much stouter, and with well-developed wings, but no pollinia. Besides being much more fleshy, the flowers are also less numerous, only two being borne on each of the two racemes known. The column of the male has been aptly compared to the neck of a swan, but Sir William Hooker spoke of it as resembling the head of a cobra, the swollen and dilated apex below the anther, aided by the colour and markings, forming a very good representation of the inflated throat of that dreaded reptile.

Now that the species is again in cultivation we may look for a repetition of the phenomenon which proved so perplexing to Lindley.

Cycnoches Loddigesii, *Lindl. Gen. and Sp. Orch.*, p. 154; *Lodd. Bot. Cab.*, xx., t. 2000; *Lindl. Bot. Reg.*, t. 1742; *Bot. Mag.*, t. 3855 (var. leucochilum, Hook.), t. 4215; *Kn. and Westc. Fl. Cab.*, i., p. 29, t. 15; *Harting. Parad.*, p. 22, t. 36.

C. cucullatum, *Lindl. Bot. Reg.*, xxiii., sub. t. 1951*.

THE HYBRIDIST.

SELENIPEDIUM × PULCHELLUM.

A VERY beautiful but equally perplexing hybrid has been raised in the collection of W. Vanner, Esq., Camden Wood, Chislehurst, for which the above name is proposed. Mr. Vanner states that it is a seedling from Selenipedium × grande crossed with the pollen of S. × Sedeni candidulum. The seedlings germinated very quickly, and some of them flowered in less than two years, which is very remarkable. But stranger than all is the fact that they are remarkably like S. × leucorrhodum (see p. 169, fig. 11), notwithstanding their different parentage. The influence of S. caudatum, coming through S. × grande, seems to have been almost lost, though it should be represented to the extent of 25 per cent., for Mr. Vanner states that there is no mistake in the parentage. Six plants have flowered, none of them quite alike.

The first is very like S. × leucorrhodum, but has slightly longer

petals, a little darker towards the apex, and the lip a little darker with the side lobes rather more spotted. No. 2 has larger and rather paler flowers. No. 3 has the petals and lip light rose, but the side lobes darker and more spotted. No. 4 has the petals blush white to the apex, and the lip pink. No. 5 has pink petals, and the staminode beautifully fringed with deep crimson-purple hairs, in which respect it differs from all the others. No. 6 is a light form with the tips of the petals pink. In all the forms the influence of the pollen parent decidedly preponderates, and without record of parentage would probably have been taken for varieties of S. × leucorrhodum. They are all exceedingly beautiful, and owing to their remarkable character we hope some one will repeat the cross and note the results.

Lælio-cattleya × Ascania.

A distinct and handsome hybrid raised by Mr. Seden, from Cattleya Trianæ ♀ and Lælia xanthina ♂, with flowers much like those of Cattleya labiata in shape, but rather smaller. The sepals are sulphur-yellow in colour, the petals very much broader, and white with a tinge of sulphur-yellow, and the lip similar in colour, except the front lobe, which is rich crimson. This handsome novelty was exhibited at a meeting of the Royal Horticultural Society on April 11th last, and deservedly awarded a First-class Certificate.

Cattleya × William Murray.

This is a brightly-coloured and very charming hybrid raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, between the two very popular Cattleyas, C. Mendeli and C. Lawrenceana, the former being the seed parent. A plant, bearing a single flower, was exhibited at the Temple Show, and received a First-class Certificate. It is fairly intermediate in shape; the colour of the sepals and petals is light rose purple, and of the lip very much like that of the pollen parent, with the addition of two yellow blotches in the throat. It is dedicated to Mr. Cookson's able gardener. The two parents are among the most popular and handsome of Cattleyas, and the offspring, beautiful as it already is, will probably develop into a superb thing when the plant becomes stronger.

Phaius × Gravesii.

A hybrid raised from P. Wallichii ♀ and P. grandifolius ♂, and thus the inverted cross of P. × hybridus, of which it must be considered a variety. It flowered, when about three years old, in the collection of H. Graves, Esq., of Orange, New Jersey, U.S.A.—R. M. Grey, in *Gardeners' Chronicle*, March 25th, p. 357.

NOTICE OF BOOK.

Les Orchidées. By D. Bois, Assistant de la Chaire de Culture au Muséum d'Histoire Naturelle, Paris; 8vo, 323 pages, 119 figures. J. B. Ballière et fils, 19, Rue Hautefeuille, Paris.

We have just received a copy of this handy little volume, of the "Bibliothèque des Connaisances Utiles" series, containing a selection of the most ornamental species of Orchids suitable for cultivation, with references to published figures and descriptions, native countries, and a short account of their culture. Also a synoptical table of genera, a brief account of their structure and geographical distribution, economic uses, etc., with an index. Beginners who can read French will find in this work a large amount of useful information, chiefly compiled from the larger works. It travels over rather a wide field, with the inevitable result that some of the articles are very much condensed, especially those devoted to cultural operations, which might well have been amplified at the expense of some of the other matter. The genera are arranged systematically, in the order of Bentham and Hooker's *Genera Plantarum*, and the species alphabetically. We would avoid looking too critically at a compilation of this kind, though one would hardly have expected to see the old error about three sexes of Catasetum repeated at the present day, nor yet to find Mormodes luxatum enumerated as a Catasetum. Nor is it clear why Cymbidium Hookerianum and C. Lowianum are made varieties of C. giganteum, considering that Vanda tricolor and V. suavis are kept distinct. Cypripedium neo-guineense and Lælia domingensis are wrongly attributed to Lindley, but we are pleased to see that Selenipedium is kept distinct from Cypripedium, as it certainly should be. Under Odontoglossums crispum, luteopurpureum, and odoratum, several synonyms are cited which do not belong there, some being natural hybrids, and as the figures cited are enumerated separately from the synonyms (as throughout the book) one might turn to every figure cited before finding the one sought for. The figures are very unequal, a few being good, but the majority quite the reverse. Figures 5 and 90 are identical, and do not represent Oncidium luridum at all, but a species of a totally different section, probably O. tetrapetalum. The habit of O. Papilio is quite unlike that represented at fig. 91, while the inflorescence of Vanilla planifolia is hardly approximately correct. English readers will be surprised to learn (*inter alia*) that Cypripedium Morganiæ realised 4,250 francs, and Vanda Sanderiana 4,500 francs, at Covent Garden Market ("vendues sur le marché de Covent Garden"). In several respects the work is capable of considerable improvement, and will doubtless be subject to revision in a future edition. It nevertheless contains much valuable information, and will prove useful to those to whom the larger works are inaccessible.

SELENIPEDIUM × LEUCORRHODUM.

THIS delicately-coloured and beautiful hybrid was raised by Mr. Seden, in the collection of Messrs. James Veitch and Sons, of Chelsea, and flowered for the first time in 1885. It was raised from S. Roezlii crossed with the pollen of Schlimii albiflorum, and shows the usual combination of the characters of its two parents. In its vigorous habit it shows the influence of S. Roezlii, also in the attenuation of the petals, and the strong suffusion of rosy purple near their apex and along the margins, as well as in the shape of the staminode, the purple hairs along its basal margin, and in the modified shape of the flower generally. But in the sepals and lip, and in the general colour of the flower, the pollen parent has exerted a decidedly

Fig. 11. SELENIPEDIUM × LEUCORRHODUM.

preponderating influence. The general colour is blush white, with a suffusion of delicate pink on the upper sepal, and of a deeper shade at the apex and margins of the petals. The lip is light rose-pink, suffused with white, the infolded side lobes ivory-white, and the staminode of the latter colour fringed with purple hairs at the back. The photograph here reproduced is from a flower kindly sent by Baron Sir Henry Schröder, of The Dell, Egham.

Selenipedium × leucorrhodum. *Deshois Monogr. Cyprip.*, p. 148.

Cypripedium × leucorrhodum, Rchb. f. in *Gard. Chron.*, 1885, i. p. 270; *Veitch Man Orch.*, iv. p. 104.

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 144.)

One other matter deserves careful consideration, namely, whether some of these natural hybrids may not be of secondary origin, and even of complex parentage. Respecting this point, Messrs. Veitch remark: "The agency by which these hybrids and polymorphisms have been produced, has been in operation for ages past, and it cannot but have happened that a large number of these forms, both of those that are known and of those hereafter to be brought to light, are not the immediate offspring of two recognised species or more primitive type, but are descended from their mixed progeny, further complicated by an occasional cross with one or other of themselves." This point may be left for the present, but from a variety of considerations, some of which have already been touched upon, I do not think such cases are as common as might at first be supposed.

The importance of a knowledge of the geographical distribution of the species of Odontoglossum will at once be apparent in this connection, but, unfortunately, information of this kind is not always easy to obtain. This point may be left for the present, and it may be that even the hybrids themselves may furnish information on the subject.

We may now proceed to enumerate the natural hybrids which have hitherto appeared, commencing with some of the best known ones, and arranging each under the joint names of its two parents, in accordance with the botanical rule for naming hybrids. In this way various forms having the same origin can be kept together—in fact, it is the only natural method of arranging them.

Odontoglossum × glorioso-crispum.—The habitat of Odontoglossum crispum is on the western spurs of the eastern Cordillera of New Granada, from about 3·45° to 5·50° N., or from about ninety miles north to ninety miles south of the city of Bogota, and at an altitude of about 7,500 to 8,800 feet above sea-level. Here, in certain localities, it is found in company with O. gloriosum, O. luteopurpureum, and O. Lindleyanum, and it is a remarkable fact that it crosses freely with each of them. With the former alone we are at present concerned.

As already pointed out, Odontoglossum × Andersonianum, described in 1868, was the first natural hybrid known. It appeared in the previous year, in a batch of O. crispum sent by Blunt to Messrs. Hugh Low and Co., of Clapton, whence it passed into the collection of the late James Dawson, Esq., of Meadow Bank, near Glasgow, and was named in compliment to his gardener, Mr. James Anderson. Reichenbach described it as one of those doubtful Odontoglots so troublesome to the Orchidist, and remarked that at

first sight it recalled both O. crispum and O. præstans. Afterwards it appeared in the collection of J. Day, Esq., of Tottenham, and then in that of Sam Mendel, Esq., of Manchester, from an importation made by Messrs. James Veitch and Sons, of Chelsea; when Reichenbach again wrote about it, as probably a hybrid between O. crispum and O. præstans or gloriosum; adding that Mr. Harry Veitch at once had the idea of its being a hybrid between O. crispum and O. gloriosum. The latter is certainly correct, for the plant presents the most unmistakable combination of the characters of the two species, with which it grows, while O. præstans, being a native of Peru, may at once be dismissed as out of the question.

Besides being the first hybrid Odontoglossum known, it is also the most variable, for a multitude of forms have since appeared which owe their descent to the intercrossing of the same two species, most of which deviate considerably from the original type, and many of them have received distinctive names, as if derived from a different cross. Distinct they certainly are in a florist's sense, and some of them, at least, will probably retain their names in gardens, though others are barely, if at all, distinguishable, and even the most distinct are connected by intermediate forms. We may now glance at these different forms, taking them as nearly as possible in the order in which they appeared.

O. × Andersonianum, as seen in its original form, has broadish segments and a white ground, with cinnamon, somewhat longitudinal spots. Subsequent arrivals showed variations in shape and breadth of segments, also in the number of spots and their depth of colour, and several of them received varietal names, as angustatum, lobatum, tenue, splendens, etc.

O. × limbatum appeared in 1870, in the collection of J. Day, Esq., of Tottenham, and is characterised by its sepals being suffused with rose-purple, and the petals and lip white, with some red-brown spots round the margin of the latter. A darker form was afterwards called variety violaceum.

O. × Ruckerianum appeared in 1873, in the collection of S. Rucker, Esq., of Wandsworth. The sepals and petals are more or less deeply suffused with purplish rose, and variously spotted with brown. Fine forms have since been called varieties splendens and insigne.

O. × baphicanthum appeared in 1876, with Messrs. James Veitch and Sons, of Chelsea. The flowers are sulphur-yellow, with a few chestnut spots, and a suffusion of purple on the sepals and petals.

O. × Jenningsianum appeared in 1878, also with Messrs. James Veitch and Sons. The flowers are creamy white, with many small cinnamon spots, which are especially numerous in the petals. The varieties parci-guttatum and limbatum subsequently appeared.

O. × hebraicum appeared in 1879, with Mr. William Bull, of Chelsea. It has pale yellow or sulphur flowers, with brown spots and stripes, some-

what like Hebrew characters—whence the name. The inflorescence is often branched, as in O. gloriosum. The varieties lineoligerum and aspersum subsequently appeared.

O. × deltoglossum appeared in 1881, with Messrs. James Veitch and Sons, of Chelsea. The sepals and petals are sulphur, with brown blotches and smears, and a lip more deltoid than usual—whence the name.

O. × Leeanum appeared in 1882, in the collection of W. Lee, Esq., of Downside, Leatherhead. It has a deep yellow ground, densely spotted with reddish brown, the lip having a very large red-brown blotch in front of the crest.

O. × Scottii appeared in 1883, in the collection of G. F. Wilson, Esq., Heatherbank, Weybridge Heath, and is characterised by its cream-yellow flowers, heavily spotted and barred with light brown.

O. × Brassia appeared in 1885, with Messrs. F. Sander and Co., of St. Albans, and is characterised by its elongated and narrow sulphur-coloured sepals and petals, with but few spots.

Of the other forms cited at the foot of this article, as derived from the same parentage, O. × Josephinæ and O. × Schlesingerianum conform most to the Andersonianum type; O. × Bleichroederianum, O. × Fitchianum, O. × Measuresianum, O. × Ortgiesianum, O. × Pollettianum, and O. × Warocqueanum, to the Ruckerianum type; while O. × Edithiæ approaches O. × baphicanthum, having a yellow ground, suffused and spotted like some forms of O. × Ruckerianum.

Hybrids are notoriously polymorphic, but the wide range of variation seen in the series of hybrids derived from O. crispum and O. gloriosum is indeed remarkable. The parents are themselves very variable, especially the former, but this only partially explains the facts. The real explanation is that the characters of the parent species are not always equally blended in the offspring, and have a tendency to separate themselves, those from one parent appearing most strongly in one part, and from the other parent in another. Hybrids are generally spoken of as intermediate between their parents, which is so far correct, but must be understood in the sense just mentioned. Sometimes the blending is very partial, as when the characters of one parent preponderate in the foliage, and of the other in the flower, and generally speaking the term intermediate must be understood in the sense that the hybrid presents a combination of characters derived from its two parents. It is this unequal fusion of the essential elements of the parent species which is the cause of the wide range of variation seen in so many hybrids, and the more diverse are the parents the greater the possibilities of variation in the offspring. When a more complete fusion takes place, a more perfect blending of the parent characters, and less variation, is seen.

In the present hybrid every shade of ground colour is seen between the yellow of O. gloriosum and the white of O. crispum, both with and without

the suffusion of the purplish rose which occurs in so many forms of the latter. The small and numerous, sometimes line-like spots of O. gloriosum are seen in combination with the yellow ground, as in O. × hebraicum, with the white ground, as in O. × Jenningsianum, or with the suffused rose ground, as in some forms of O. × Ruckerianum. Or in each case they may be few and larger, and ranging from chestnut to deep red-brown; or, occasionally, they may be almost or quite absent, as in unspotted forms of O. crispum. The branched inflorescence of O. gloriosum also appears in O. hebraicum. With regard to shape, some forms have broad segments, approaching those of O. crispum, and others very narrow, as in O. gloriosum; or the increased size of O. crispum may be devoted entirely to lengthening the segments, as in O. × Brassia, a form with very long, narrow segments, not matched among varieties of either parent. This form, originally almost unspotted, has now appeared with the dense spotting of O. × hebraicum, and the others are all connected by various intermediates, so that it is almost impossible to say where Andersonianum passes into Jenningsianum on the one hand, and into Ruckerianum on the other, and this again into baphicanthum, which in its turn grades into Leeanum and deltoglossum, while the shape of lip of the latter co-exists with quite different colours. Jenningsianum again passes into hebraicum, and hebraicum into Brassia and deltoglossum, and so the cycle is completed in various directions, in the innumerable forms now in gardens.

From the very nature of the case this must be so, when a series of hybrids are derived from the same two species, and in the present instance it seems to me that the best course would be to consider them all as varieties of O. × Andersonianum. They are not distinct hybrids, nor can they properly be placed as varieties of either parent, and the course proposed is the only alternative. Reichenbach proposed to make them varieties of one, under the name of O. × lanceans, but there is no need to coin a new name for the purpose, when the old one answers so much better.

Our knowledge of these forms has only been acquired by slow degrees, and two or three other species have been mentioned as probable parents. O. præstans has already been disposed of; O. leucopterum, mentioned by Reichenbach under O. × deltoglossum, has no better claim; while O. odoratum, whose aid has been invoked to account for the yellow forms, does not grow with O. crispum at all. O. gloriosum has been considered as synonymous with it, but the two are not identical, though nearly allied. O. odoratum grows in Venezuela, where no gloriosum occurs, but is not found in New Granada, where it is replaced by O. gloriosum. In any case O. odoratum proper is not concerned in the parentage of the present hybrid.

So far as I can ascertain the following is a complete list of the forms derived from O. crispum and O. gloriosum, with references to original descriptions and published figures :—

Odontoglossum × Andersonianum, Rchb. f. in *Gard. Chron.*, 1868, p. 599; 1872, p. 41; 1884, ii. p. 44, fig. 11; 1885, ii. 680, fig. 150; *Fl. Mag.*, n. s., 1872, t. 45; *Orchid Album*, i. t. 35; *Orchidophile*, 1885, p. 132, fig. 7 (Andersoni). *Gartenflora*, xxxix., p. 377, t. 1326. O. crispum var. Andersonianum, *Veitch Man. Orch.*, i. p. 25. O. × lanceans var. Andersonianum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

Var. angustatum, Rchb. f. ex *Orchidophile*, 1889, p. 277, with plate.

Var. lobatum, Rchb. f. in *Gard. Chron.*, 1879, i. p. 74; 1884, ii. pp. 44, 45, fig. 12; 1885, ii. pp. 680, 681, fig. 151.

Var. splendens, Williams in *Orchid Album*, vii. t. 292.

Var. tenue, Rchb. f. in *Gard. Chron.*, 1878, i. p. 492.

O. × baphicanthum, Rchb. f. in *Gard. Chron.*, 1876, ii. p. 260; O. odoratum var. baphicanthum, Rchb. f. ex *Lindenia*, iii. p. 67, t. 128; *Veitch Man. Orch.*, i. p. 55. O. × lanceans var. baphicanthum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

O. × Bleichroederianum, Lind. in *Lindenia*, iv. p. 69, t. 177.

O. × Brassia, Rchb. f. in *Gard. Chron.*, 1885, i. p. 501. O. × lanceans var. Brassia, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

O. × deltoglossum, Rchb. f. in *Gard. Chron.*, 1881, i. p. 202. O. odoratum var. deltoglossum, *Veitch Man. Orch.*, i. p. 56. O. × lanceans var. deltoglossum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

O. × Edithiæ, *Warn. Sel. Orch.*, ser. 3, t. 25.

O. × Fitchianum, *Warn. Sel. Orch.*, ser. 3, t. 34.

O. × hebraicum, Rchb. f. in *Gard. Chron.*, 1879, i. p. 462; 1881, ii. pp. 172, 173, fig. 36; *Orchid Album*, v., t. 194; *Reichenbachia*, ser. 1, i. p. 81, t. 37. O. odoratum var. hebraicum, *Veitch Man. Orch.*, i. p. 56. O. × lanceans var. hebraicum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

Var. aspersum, Rchb. f. ex *Reichenbachia*, ser. 1, vol. ii. p. 69, t. 79.

Var. lineoligerum, Rchb. f. in *Gard. Chron.*, 1883, i. p. 44; *Orchid Album*, ii., t. 85.

O. × Jenningsianum, Rchb. f. in *Gard. Chron.*, 1878, i. p. 366. O. crispum var. Jenningsianum, *Veitch Man. Orch.*, i. p. 26. O. × lanceans var. Jenningsianum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

Var. limbatum, Rchb. f. in *Gard. Chron.*, 1882, ii. p. 808.

Var. parciguttatum, Rchb. f. in *Gard. Chron.*, 1883, i. p. 110.

O. × Josephinæ, Williams in *Orchid Album*, iv. sub. t. 174, also t. 188.

O. × lanceans, Rchb. f. in *Reichenbachia*, ser. 1, i. pp. 81, 82.

O. × Leeanum, Rchb. f. in *Gard. Chron.*, 1882, i. p. 525; *Orchid Album*, iii. t. 101. O. odoratum var, Leeanum, *Veitch Man. Orch.*, i. p. 56. O. × lanceans var. Leeanum, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

O. × limbatum, Rchb. f. in *Gard. Chron.*, 1870, p. 417; *Rchb. f. Xen. Orch.*, ii. p. 192, t. 183, fig. 2. O. crispum var. limbatum, *Veitch Man. Orch.*, i. p. 26.

Var. violaceum, Rchb. f. in *Gard. Chron.*, 1878, i. p. 725.

O. × Measuresianum, O'Brien in *Gard. Chron.*, 1885, ii. p. 619.

O. × Ortgiesianum, Sander, ex Ortgies, in *Gartenflora*, xl. p. 617, t. 1360.

O. × Pollettianum, O'Brien in *Gard. Chron.*, 1885, ii. pp. 680, 681, fig. 152; *Orchid Album*, vi. t. 280.

O. × Ruckerianum, Rchb. f. in *Gard. Chron.*, 1873, p. 105, fig. 18; 1885, ii. p. 204, fig. 42; *Lindenia*, i. p. 87, t. 41. O. crispum var. Ruckerianum, *Veitch Man. Orch.*, i. p. 27. O. × lanceans, Rchb. f. in *Reichenbachia*, ser. 1, i. p. 82.

Var. insigne, O'Brien in *Gard. Chron.*, 1885, ii. p. 748, fig. 167.

Var. splendens, Rchb. f. in *Gard. Chron.*, 1883, ii. p. 8.

O. × Schlesingerianum, L. Lind. in *Lindenia*, v. p. 99, t. 240.

O. × Scottii, Hort., *Gard. Chron.*, 1883, i. p. 222.

O. × Warocqueanum, Lind. in *Lindenia*, iv. p. 75, t. 180.

R. A. R.

(*To be continued.*)

DENDROBIUM × CRASSINODI-WARDIANUM.

This handsome Orchid is specially interesting, as the first natural hybrid known in the genus. It seems to have been known at least as early as 1879; for prior to April of that year flowers were sent to Reichenbach by Mr. Borwick, of Walthamstow, as a supposed hybrid, though the Hamburg botanist states that he was "then as incredulous as St. Thomas." Then it appeared with Messrs. Hugh Low and Co., of Clapton; Mr. Dorman, of Sydenham; Messrs. Wm. Thomson and Sons, of Clovenfords (from Messrs. Low's importations); Messrs. James Veitch and Sons, of Chelsea; and the Liverpool Horticultural Company; so that it is now by no means rare. And now a plant has appeared in an importation made by Messrs. Austin and McAslan, Cathcart Nursery, near Glasgow, in the spring of 1892, and has passed into the collection of Hugh Steven, Esq., Westmount, Kelvinside, near Glasgow. A peculiarity of this particular plant is that it retained its leaves until the time of flowering, while plants of D. Wardianum subjected to the same treatment were deciduous, as usual. This may not prove a constant character, as Mr. David Wilson, the gardener, states that the plants had a short season of rest, though all were grown together. It is an exceedingly beautiful hybrid, and quite intermediate in character. The habit is like that of D. Wardianum, with rather thicker nodes, and the flowers finer than those of D. crassinode, with the addition of a pair of dark brown, eye-like spots on the disc of the lip. When well grown, the long stems are perfectly wreathed with flowers.

Dendrobium × crassinodi-Wardianum, *Veitch Man. Orch.*, iii. p. 32.
D. × Waltoni, Hort., *The Garden*, 1885, i. p. 119.
D. × melanophthalmum, Rchb. f. in *Gard. Chron.*, 1886, i. p. 426.
D. crassinode × Wardianum, Hort., *Journ. of Hort.*, 1887, i. pp. 312, 313, fig. 58; Rolfe in *Gard. Chron.*, 1889, i. p. 683.

NOVELTIES.

CIRRHOPETALUM ROBUSTUM, Rolfe.—No surprise need be felt at the discovery of a Cirrhopetalum in New Guinea, as so many Indian and Malayan genera are represented in the flora of that remarkable island. But the present species has also an additional interest, as it is the largest species in cultivation, if not, indeed, the largest yet known. The umbel, bearing eleven flowers, measures no less than seven and a half inches across, and its peduncle is between three and four lines in thickness. It was brought from New Guinea three years ago by Captain Clarke, a nephew of Colonel Trevor Clarke, of Welton Place, Daventry, and flowered for the first time in the collection of the latter in April last. It is a very robust and remarkable species, as the following description will prove :—

Rhizome very stout and woody. Pseudobulbs ovate-oblong, compressed, and with two acute angles on either face, 2½ in. long, 1½ in. wide. Leaf linear-oblong, very stout, 5–7 in. long. Scape very stout, with 11 flowers, and a few undeveloped buds at the apex. Umbel somewhat racemose, its axis ¾ in. long. Bracts broadly ovate or ovate-oblong, acute, 7–9 lin. long, 2½–5 lin. broad. Pedicels 1¼–1½ ins. long. Dorsal sepal oblong, acute, 15–17 lin. long, 5 lin. broad; lateral ones 2⅙–2¼ in. long, upper half connate, 7–7½ lin. broad. Petals oblong, aristate-acuminate, 5 lin. long. Lip very fleshy, recurved, cordate-oblong, subobtuse, lightly pubescent at base, 4 lin. long, disc with a pair of parallel keels separated by a wide channel. Column very stout, 1½ lin. long, with a pair of stout, subacute teeth. Sepals greenish-yellow, the lateral ones reddish-purple at the base inside. Petals paler with faint suffusion of reddish-purple. Lip deep red-purple. Column dull yellow. There are no marginal hairs or appendages on the sepals and petals, as in many other species of the genus.

PHYSOSIPHON LINDLEYI, Rolfe.—The largest-flowered species known, the flowers measuring seven lines in length. It flowered with Mr. F. W. Moore, at the Glasnevin Botanic Garden, in April, 1892, and proved identical with dried specimens collected by M. J. Linden, near Chiapas, in Mexico, as long ago as 1840. The tube of the sepals is light green, and the lobes orange-red or brick-red.—*Kew Bulletin*, p. 61.

BULBOPHYLLUM RACEMOSUM, Rolfe.—A Bornean species, allied to B. anceps, Rolfe (*Lindenia*, viii. p. 33, t. 351), which is also a native of the same country. The present one, however, has far larger flowers, which are honey-coloured, the dorsal sepal and petals spotted with maroon, and the lateral sepals minutely spotted on the upper half and striped on the lower one with the same colour. The lip is purple, with numerous black dots. It flowered in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, in August, 1892.—*Kew Bulletin*, p. 61.

CIRRHOPETALUM BRIENIANUM, Rolfe.—A species introduced from Borneo by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in March, 1891; also with Mr. J. O'Brien, of Harrow-on-the Hill, in the following October, the plant being derived from the same source. It is allied to C. Makoyanum, Rchb. f. (*Gard. Chron.*, 1879, i., p. 234). The lateral sepals are light straw-colour, except a small portion near the base, which, with the rest of the flower, is dark dull maroon.—*Kew Bulletin*, p. 62.

CŒLOGYNE BORNEENSIS, Rolfe.—A Bornean species, introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in August, 1892. It belongs to the section Flexuosæ, and is allied to C. longifolia, Lindl. The flowers are whitish or light buff, with red-brown reticulations on the lip.—*Kew Bulletin*, p. 62.

EPIDENDRUM LAUCHEANUM, Rolfe.—A distinct species of the section Spathium, allied to E. grandiflorum, Lindl., but with much smaller leaves and flowers, which latter are far more numerous and produced on a long,

flattened peduncle. The lip is light glaucous green; the rest of the flower, with the peduncles and rachis, light ochreous-brown, or sometimes dull purple-brown. It was introduced from Popayan by Messrs. F. Sander and Co., of St. Albans, with whom it flowered in November, 1889, and afterwards at the Glasnevin Botanic Garden, in September, 1892.—*Kew Bulletin*, p. 62.

EPIDENDRUM TRICOLOR, Rolfe.—A graceful little species, imported from Venezuela, with Cattleya Mossiæ, Hook., by Messrs. Hugh Low and Co., Clapton, with whom it flowered in November, 1892. It is allied to E. purum, Lindl., but is readily distinguished by its orange-coloured lip. The flowers are small and numerous, and smell like cucumbers; the sepals and thread-like petals are light yellow, and the column green.—*Kew Bulletin*, p. 63.

Fig. 12. STANHOPEA LOWII.

STANHOPEA LOWII, Rolfe.—A handsome species, introduced from New Granada by Messrs. Hugh Low and Co., of Clapton, with whom it flowered in December, 1892, and again quite recently. The sepals and petals are of a creamy buff shade, the latter with numerous minute brown spots on the

disc, and the lip ivory-white, with bands of dull maroon, formed of numerous suffused spots, on the upper half of the hypochil inside. The column is pale green, with ivory-white wings. It is allied to S. eburnea, Lindl., and S. Reichenbachiana, Roezl, but differs from the former in its globose hypochil and buff sepals and petals, and from the latter in having the mesochil solid, not deeply channelled. The flowers have a sweet, Narcissus-like scent.—*Kew Bulletin*, p. 63. The photograph here reproduced is from a flower kindly communicated by Messrs. Hugh Low and Co.

Aërides platychilum, Rolfe.—A distinct and pretty Aërides, which flowered with Mr. F. W. Moore, at the Glasnevin Botanic Garden, in April, 1892. It is allied to A. Houlletianum, Rchb. f., but the front lobe of the lip is flat, not plicate, and the side lobes are only free above the middle, not divided to the base and spreading. The sepals and petals are light buff, faintly stained with purple near the apex, and the lip pale yellowish-white, with a bright purple apex and some light purple bars on the side lobes. The native country is not known.—*Kew Bulletin*, p. 64.

Saccolabium Mooreanum, Rolfe.—A native of New Guinea, introduced with Dendrobium Phalænopsis, by Messrs. F. Sander and Co., of St. Albans. It flowered with Mr. F. W. Moore, at the Glasnevin Botanic Garden, in October last; then with Sir Trevor Lawrence, Bart., Burford, Dorking, in November; and shortly afterwards with C. J. Lucas, Esq., of Warnham Court, Horsham. It is allied to S. Mimus, Rchb. f., and two or three other Polynesian species. The flowers are densely arranged in a short cylindrical raceme, the colour light rose, tipped with green.—*Kew Bulletin*, p. 64.

Angræcum bistortum, Rolfe.—A native of West Africa, collected in the interior of the colony of Lagos, by Sir Alfred Malony, K.C.M.G., and brought to Kew by Mr. J. McNair, late Curator of the Lagos Botanical Station. It is allied to A. arcuatum, Lindl., but has smaller flowers, and the spur of the lip is curved into a loop, and its tip remains tightly clasped by the sheathing bract. It flowered at Kew, in January, 1892.—*Kew Bulletin*, p. 65.

Bletia Godseffiana, Kränzl. in *Gard. Chron.*, April 15th, p. 442.—A very old species under a new name, Bletia acutipetala, Hook., a native of the West Indies, Mexico, and Guatemala.

Odontoglossum Kranzlinii, O'Brien.—Introduced from Columbia, by Messrs. F. Sander and Co., of St. Albans, and very nearly allied to O. odoratum, Linden.—*Gard. Chron.*, April 15th, p. 442.

PONTHIEVA MACULATA.

A specimen of this remarkable and very pretty terrestrial Orchid has been received for determination from Alex. Hodgkinson, Esq., of The Grange, Wilmslow, Cheshire. The leaves of this Orchid are covered with long soft hairs, much like those of Arnica montana, and measure eight to twelve inches long, by one inch and a half to two inches broad. The spike is erect, one and a quarter to one and a half feet high, and the elegant flowers are borne in a lax raceme. The lateral sepals are white, spotted with greenish brown, and from the centre of each spot arises a glossy, appressed, unicellular, clavate hair, which is filled with colourless fluid, and so transparent that it is best seen with the aid of a lens. The dorsal sepal is pale brown with darker streaks, and the petals, which are pendulous from the top of the column, are united into a single organ, deep yellow in colour and with red-brown streaks, and on cursory examination might be mistaken for the lip, which is very small and fleshy. The lateral sepals are uppermost, and being the most conspicuous parts of the flower they impart to it a very remarkable appearance, even for an Orchid. It is certainly a striking and attractive little plant. It is a native of Venezuela and New Granada, and has been collected by Linden, Crueger, and Fendler, in the former, and by Funck and Schlim in the latter, in the province of Pamplona, at 7,500 feet elevation. Mr. Hodgkinson states that it has been grown at the cool end of the stove, potted in a mixture of fibrous loam, peat and sand, with a few finely-broken potsherds, and a moderate supply of water, and that the roots seem to die as soon as they leave the compost and enter the crocks. Being a terrestrial species it is probable that but little drainage is necessary.

Ponthieva maculata, Lindl. in *Ann. and Mag. Nat. Hist.*, xv. p. 385; Moore and Ayres *Gard. Mag.*, i. p. 248, fig. 3; N. E. Br. in *Gard. Chron.*, 1882, i. p. 496; *Bot. Mag.* t. 6637.

CALENDAR OF OPERATIONS FOR JUNE.

By W. H. White, Burford, Dorking.

The long-continued spell of brilliant summer-like weather has been all that could be desired for the welfare of these plants, and I doubt if the majority of Orchids ever looked better than they do at this season, especially those plants that occupy the warmest divisions. They seem to delight in their natural sun-heat, growing and blooming more vigorously than in our ordinary spring climate. But with the colder growing species, it has been almost impossible to keep them anything like sufficiently cool, and where they are grown in houses exposed all day to the full glare of the sun, it has

been exceedingly difficult to keep the temperature down, and only by ample ventilation, heavy shading, and a plentiful supply of moisture, could it be effected. A lean-to house, facing north, or north-east, is no doubt the best position for the charming Andine species during a hot, dry summer.

The enthusiastic grower will certainly find great pleasure in looking over his collection, and noticing that almost every day some plant has made a fresh start, either by sending out new roots, young growths, or producing its charming flower-spikes. It is therefore a good time to caution him against the practice of allowing the spikes to remain on too long, as is frequently the case, greatly to the detriment of the plants, causing them to shrivel, and leaving them in such a debilitated state that they are scarcely able to form new growth, and often gradually dwindle away. Undoubtedly it conduces greatly to the health of the plant if the flower spikes are cut off after a reasonable length of time. Small and weakly plants invariably suffer if allowed to bloom at all; consequently it is advisable to remove their flower spikes immediately they appear. By giving the plants a fair amount of rest, and afterwards gradually starting them into growth, many valuable plants may be saved and brought round to their normal condition of health.

Now that the majority of the Cattleyas and Lælias have commenced their growing season, I earnestly recommend a sharp look out for that terrible pest, the Cattleya fly. On recently looking through a well-cultivated collection of Orchids, I was told by the gardener that his plants were sorely afflicted by the larvæ of this fly. A few months ago nothing of this was observed, until several newly imported species of Cattleya were bought, and as soon as these began to grow the young shoots began to swell and to show no inclination of making any further progress. These shoots were cut off, examined, and there was found this destructive pest. Very soon afterwards, other plants became similarly affected, and the young growths were immediately cut off and burnt. This seems to be the only effectual means of exterminating the pest. Another remedy is to slightly fumigate the house with tobacco smoke just before sunset every evening. I am told that it is principally at this time that the fly is at work, going from plant to plant depositing its eggs. Fumigation cannot possibly affect the grub concealed in the young growths, but it will often prevent the fly from obtaining a footing upon others. I cannot too fully impress upon your readers the advisability of thoroughly examining and cleaning each and every plant that is added to the collection, because if these pests be once allowed sufficient time to establish themselves it is almost impossible to complete their destruction before a very considerable amount of damage has been done, and many a valuable plant irretrievably ruined.

By this time Cattleya gigas, C. Dowiana and its beautiful variety aurea will be fast finishing up their young flowering growths, and to the young

beginner a word of warning may not be out of place. It will be noticed that the outer sheath which encircles the young bulb, especially at its base, clings so tightly to it as to prevent the ingress of air, causing over-abundance of moisture between the sheath and bulb. To counteract this, by allowing the moisture to evaporate, it is necessary to split open the sheath from top to bottom. If this operation be delayed the result will probably be that the new bulb will turn black, when it must be cut off immediately, or the plant will die altogether. After the sheath has been opened, if the bulb is sound, keep the plant rather dry at the root for a few days, but on no account give the ordinary resting treatment, or the bulbs would mature too quickly, and the plant would start again into fresh and weakly growth.

The practice of putting Orchids when in flower into what is generally termed the show house is a dangerous one, and is often attended with injurious results. When the plants are taken from their hot and moist growing atmosphere, and placed in a dry, cool, and draughty house, they are very liable to suffer severely through the sudden change. No doubt the gathering together of different species and varieties of Orchids in bloom into one house, tastefully arranged with Palms and Ferns is both beautiful and effective, especially to the ordinary visitor. But to the grower and lover of these charming plants it is of far more interest and pleasure, when looking round a collection, to see both those that are in and out of flower together in their own departments.

The beautiful dark blue Aganasia cœrulea is almost identical in colour with Vanda cœrulea, and, like that species, exceedingly difficult to cultivate for any length of time. The principal point to be attended to is to fasten the plants on blocks of wood, suspended near the roof glass of the Mexican house, or a hot, sunny position in the plant stove, and frequently syringe the roots and foliage when in a growing state.

An Orchid of exquisite beauty now in bloom is Vanda teres, and up to within a few years ago it was considered by many to be a very difficult matter to get it to flower well. The principal requirements of this plant are sun and water, and if placed in a hot sunny corner of the Mexican house, and well syringed five or six times a day during active growth, it will thrive luxuriantly and bloom profusely. If insufficient water be given the terete leaves will shrivel, and the lower ones drop off; but when growth is completed less will suffice. Our plants are never subjected to the severe drying off in winter that is generally advocated, but they receive sufficient water at all times to keep the stems and leaves plump, and no trouble whatever is experienced in flowering them. Our method is to fasten five or six stems on to long upright teak rafts, with the rods at least one inch apart to allow a free circulation of air amongst the roots. The lower part of the raft is then inserted into a pot, and firmly fixed with crocks, over

which is placed a thin layer of sphagnum. When the stems have overgrown the length of the teak rods, another raft is screwed to the top of the old one, and at the same time, about eighteen inches to two feet of the plant, stem and raft is carefully sawn off at the bottom, and re-lowered into the pot. These bottom stems if properly taken care of may soon be encouraged to send out fresh growths, and in this way the plant is easily propagated.

The same remarks also apply to the rarely seen Vanda Hookeriana, except that this variety requires warmer treatment all the year round.

Arachnanthe Cathcartii will grow luxuriantly and bloom freely in a shady part of the hottest house, where it may be syringed several times a day during summer. It succeeds best when trained up teak rods as recommended for Vanda teres.

Arpophyllum giganteum and A. spicatum are species of Orchids that are generally neglected, but both plants are of easy cultivation. When seen with a dozen or more flower spikes twelve inches in length, which remain in perfection about four weeks, they lend an additional charm to the intermediate house. Both are now starting into growth, and if necessary should be re-potted into a compost of good fibrous peat with one-third loam, interspersed with small broken crocks. Plenty of water when growing is essential, and by placing the plants in the lightest position available they will bloom profusely.

Odontoglossum Krameri when well flowered is very pretty, though unfortunately it is often seen in a languishing condition, which is probably due to the roots of this plant not liking peat. I have a plant under my care which for some time continued to deteriorate slowly, although several experiments were tried to save it. At last the plant was shaken out, thoroughly cleansed from the old peat and moss, and re-potted into clean sphagnum only. The roots quickly responded to the change of compost, and the plant soon returned to its former healthy condition. The cool and shady part of the intermediate house is the proper place for it. Give plenty of water when in full growth, but when at rest it must be kept rather dryer than the majority of Odontoglossums.

Ada aurantiaca may be re-potted, as it passes out of bloom, into equal parts of peat and sphagnum. Allow plenty of drainage, so that during the summer months the plants may receive abundance of water without the compost becoming stagnant. In winter less will suffice, but never allow the soil to become thoroughly dry. This plant, with its orange-scarlet flowers, arranged with Odontoglossums of the crispum type, forms a very pleasing contrast of colour, each showing the other off to considerable advantage.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

SATYRIUM SPHÆROCARPUM, Lindl. The Natal form, which has much larger flowers than the Delagoa Bay plant originally described by Lindley, and may even represent a distinct species. The flowers are white, with some brownish-red lines on the segments. Tubers were sent to Kew by Mr. J. M. Wood, A.L.S., Curator of the Natal Botanic Garden, in March, 1892, and flowered in the following October.—t. 7295.

THE GARDEN.

HABENARIA MILITARIS, Rchb. f. A coloured plate of this handsome terrestrial Orchid, from a plant in the collection of Sir Trevor Lawrence, Bart., where it is so successfully grown. Its culture was given at p. 83 of our March number.—May 6th, p. 370, t. 903.

JOURNAL OF HORTICULTURE.

CALYPSO BOREALIS (see p. 154).—April 27th, p. 331, fig. 62.

LÆLIO-CATTLEYA × ASCANIA (see p. 167 of our present issue).—May 4th, p. 351, fig. 65.

ZYGOPETALUM × SEDENI.—May 11th, p. 377, fig. 69.

LINDENIA.

The April number of this work contains :—

VANDA TRICOLOR, Lindl., VAR. PLANILABRIS, Lindl. A handsome variety, characterised by its broad, flat lip.—t. 369.

CATTLEYA LABIATA, Lindl. Three handsome varieties—ALBA, fig. 1; GLORIOSA, fig. 2; and FLAMMEA, fig. 3.—t. 370.

CYRTOPODIUM ALICIÆ, L. Lind. and Rolfe. A small-flowered new species from Pernambuco, with light whitish-green flowers spotted with red-brown.—t. 371.

COLAX JUGOSUS, Lindl.—t. 372.

ORCHIDOPHILE.

CYMBIDIUM DEVONIANUM, Paxt.—February, p. 48, with plate.

CYCNOCHES CHLOROCHILON, Klotzsch.—February, pp. 52, 53, with figure.

REICHENBACHIA.

Part III. of Volume II. of the second series contains :—

CYPRIPEDIUM × LEEANUM, Rchb. f. VAR. GIGANTEUM, Rolfe. An exceptionally large and handsome variety, raised in the collection of Messrs.

Heath and Son., of Cheltenham, from C. Spicerianum crossed with the pollen of a large variety of C. insigne. It has much less purple spotting on the dorsal sepal than usual, and is the finest variety yet raised.—p. 19, t. 57.

CŒLOGYNE PANDURATA, Lindl. A handsome Bornean species, with very large green flowers, marked with black on the lip.—p. 21, t. 58.

SCHOMBURGKIA SANDERIANA, Rolfe. A handsome species, allied to S. Humboldtii, Rchb. f., introduced by Messrs. F. Sander and Co., of St. Albans. The inflorescence is branching, and the flowers rosy carmine, with three white keels on the disc of the lip and a deep purple blotch in front. It received an Award of Merit from the Royal Horticultural Society in December, 1891, when exhibited by Baron Schröder, in whose collection the drawing was made.—p. 23, t. 59.

ONCIDIUM SUPERBIENS, Rchb. f. A handsome species allied to the well-known O. macranthum. The form here figured has petals with a paler ground and more purple markings than the original form, and exists in some collections under the name of O. undulatum, Lindl., a very different species, with which it has been confused.—p. 25, t. 60.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

AT the horticultural meeting of the month, held at Ghent, many very interesting Orchids were exhibited, notably the collection of Odontoglossums of M. Jules Hye, comprising O. Hallii leucoglossum, O. crispum, O. Pescatorei, O. × Andersonianum, and others: also a handsome light form of Cattleya Mendeli, a dark Lælia purpurata, and Miltonia Roezlii, a beautiful specimen, with fourteen flowers, from the same exhibitor. M. A. Van Imschoot exhibited the handsome Masdevallia × Heathii; and M. Ed. Pynaert, Miltonia vexillaria punctata, the lip covered with small streaks radiating from the centre, and producing a charming effect.

At the meeting of the Orchidéene, of Brussels, there was a good assemblage of handsome Orchids, among which we may note a handsome hybrid Odontoglossum, apparently partly derived from O. triumphans, a handsome Cattleya allied to C. Schilleriana and C. Aclandiæ, a very fine Cattleya Mendeli, the curious Catasetum tenebrosum, and Epidendrum Randii, from Messrs. Linden; a fine Miltonia vexillaria, with large, dark-coloured flowers, and Odontoglossum × Andersonianum giganteum, from M. Count de Bousies; Gongora tricolor, from M. A. Van Imschoot, etc.

At the Horticultural Exhibition at Bruges, held on May 7th, many fine Orchids were also exhibited, chiefly consisting of the usual popular species, those of M. G. Vincke Dujardin being especially conspicuous.

THE MANCHESTER ORCHID SHOW.

THE Exhibition of Orchids of the Royal Botanical and Horticultural Society of Manchester, to which we alluded at p. 130, was held at The Gardens, Old Trafford, from May 19th to 25th, inclusive, and was a great success. The great Exhibition Hall was almost filled with Orchids of the finest quality, and most effectively arranged.

For the best miscellaneous collection (Amateurs), the first prize was secured by G. Hardy, Esq., Timperley, Cheshire (gr. Mr. Holmes), with a magnificent group, including Lælia tenebrosa, L. purpurata, Oncidium Marshallianum, Miltonia vexillaria, Odontoglossum citrosmum, O. crispum, Epidendrum vitellinum, and Dendrobium infundibulum, intermixed with Phalænopses, Vandas, Dendrobiums, Masdevallias, and Cattleyas, some of them in quantity, arranged in a very effective manner. F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (son of the above), secured the second prize with a very charming group.

In the Nurserymen's class the first prize fell to Mr. James Cypher, Cheltenham, and the second to Messrs. Heath and Son, of the same place, both of whom arranged very effective groups.

For thirty Orchids in bloom there was only a single exhibiter, T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), who received the first prize for a magnificent group.

For the best collection of Cypripediums, G. Hardy, Esq., was first, with a splendid group, and Mr. J. Cypher second.

For ten specimen Orchids in bloom, Mr. G. Hardy also secured the Silver Cup presented by Joseph Broome, Esq., the President of the Council, with a superb lot. The second prize went to Mrs. Hodgkinson, Haigh Lawn, Bowdon.

For the best collection of Cattleyas, Mr. G. Hardy was again first, with about thirty very fine plants, and W. Shaw, Esq., Stamford Lodge, Ashton-under-Lyne, second.

For a collection of Odontoglossums, W. Thompson, Esq., Walton Grange, Stone, Staffordshire, was first, and F. Hardy, Esq., second, the competition being very close.

For Dendrobiums, a Silver Cup presented by T. Statter, Esq., Mr. G. Hardy was first and Mr. J. Cypher second.

The Silver Cup, value fifteen guineas, presented by Messrs. F. Sander and Co., of St. Albans, for the best new Orchid in flower sent out by them since 1887, was secured by T. Statter, Esq., with Odontoglossum mulus Statterianum, a magnificent form. Mr. G. Hardy competed with O. Wattianum Hardyanum.

The Veitch Memorial prize and £5 for the best hybrid Orchid already in commerce, also fell to Mr. Statter, for Cypripedium × Aylingii.

A similar prize for the best hybrid not in commerce was not awarded, as Cypripedium × Hardyanum, exhibited by Mr. G. Hardy, was decided to be identical with C. × macrochilum.

The Williams Memorial Medal and £5 for the best *bonâ fide* specimen Orchid in the Show, went to Mr. G. Hardy, for Cattleya Mossiæ Reineckiana, a perfect specimen with sixteen blooms.

Messrs. Charlesworth Shuttleworth and Co., of Heaton, Bradford, Messrs. Linden, of Brussels, and Messrs. F. Sander and Co., of St. Albans, were each awarded the Society's Gold Medal for a magnificent group, consisting largely of Orchids.

Messrs. W. L. Lewis and Co., of Southgate, Messrs. Hugh Low and Co., of Clapton, and Messrs. B. S. Williams and Co., of Upper Holloway, were also awarded Special Prizes for fine groups staged not for competition. These, as well as the other groups named, contained many interesting and beautiful things, which we have not space to enumerate.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society, held in the Drill Hall, James Street, Westminster, on April 25th, there was a fine display of Orchids.

The President, Sir Trevor Lawrence, Bart., exhibited an exceedingly effective group, to which a Silver Flora Medal was awarded. Among the plants may be mentioned a handsome piece of the brilliant Masdevallia Arminii with over seventy blooms, and an almost equally handsome M. × Geleniana, both of which received First-class Certificates. M. Shuttleworthii and its variety xanthocorys were also included; the rare Bulbophyllum Sillemianum; B. Lobbii siamense, to which a Botanical Certificate was awarded; Dendrobium revolutum; a fine specimen of D. thyrsiflorum; Cypripedium villosum aureum; and fine specimens of Selenipedium × Schroederæ, Cattleya Mendeli, C. Schroederæ, and Epidendium atropurpureum album, the latter of which received an Award of Merit.

Walter C. Clark, Esq., Sefton Park, Liverpool, sent flowers of Phaius × Cooksoni.

Earl Cowper, Panshanger House, Hertford (gr. Mr. J. Fitt), showed some varieties of Cypripedium barbatum, and a hybrid Odontoglossum, apparently a form of O. × mulus.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. S. Cook), showed five remarkably fine forms of Odontoglossum crispum.

C. E. Goodheart, Esq., Langley Park, Beckenham (gr. Mr. R. Pudbury), sent Selenipedium caudatum var. Wallisii.

W. W. Mann, Esq., Ravenswood, Bexley, showed a fine plant of Cycnoches pentadactylon with a spike of male flowers and one female (see p. 162).

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent a spike of the very rare Saccolabium cerinum, to which a Botanical Certificate was awarded.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed well-flowered examples of Cypripedium Boxallii superbum and C. × Measuresianum aureum; also a Dendrobium nobile, Statter's variety, which the Committee wished to see again.

C. Winn, Esq., Selly Hill, Birmingham, sent the pretty rose-purple Dendrobium × Nestor.

E. G. Wrigley, Esq., Dukinfield, Cheshire (gr. Mr. C. Harris), showed Cattleya citrina, Sophronitis grandiflora, and Dendrobium nobile albiflorum.

Reginald Young, Esq., Sefton Park, Liverpool, sent cut flowers of Vanda teres Aurora, two fine forms of Maxillaria Sanderiana, and other Orchids.

Messrs. Condor and Raphael, Kings Langley, sent three plants of Cypripedium niveum and Dendrobium amænum.

Messrs. W. L. Lewis and Co., Southgate, staged a showy group of Cattleyas, Cypripediums, Odontoglossums, including O. triumphans pallens, Lælia Boothiana, several plants of Oncidium ampliatum, and others, and received a Vote of Thanks.

Messrs. Hugh Low and Co., Clapton, showed an excellent group of Dendrobiums, Cypripediums, Phalænopsis, and others, including the rare Cypripedium Mastersianum, and Stanhopea Amesiana, to which latter an Award of Merit was given. A Vote of Thanks was awarded.

Messrs. F. Sander and Co., St. Albans, exhibited a fine group, to which a Silver Banksian Medal was awarded. It included some fine Odontoglossums, including O. Roebelenianum, a supposed natural hybrid, which received an Award of Merit; the remarkable Lælia Digbyana, Maxillaria Sanderiana xanthoglossa (Award of Merit), Zygopetalum Klabochorum, Cattleya Skinneri alba and C. × Burberryana, Oncidium roraimense, Cypripedium Rothschildianum, and other showy Orchids.

Messrs. Seeger and Tropp, East Dulwich, showed the interesting Lycaste lasioglossa.

Messrs. James Veitch and Sons, Chelsea, sent two striking hybrids, Lælio-cattleya × Ascania (see p. 167), which received a First-class Certificate, and Lælia × Latona, with rich Indian yellow flowers, striped with purple on the lip.

Mr. W. Whiteley, Hillingdon, near Uxbridge, showed a good form of Odontoglossum × excellens.

On May 9th there was again a very fine display, and many very interesting Orchids were staged. The amateurs were especially numerous on this occasion.

Major-Gen. E. S. Berkeley, Bittern Park, Southampton, showed Galeandra nivalis, Dendrobium transparens album, D. hercoglossum, and D. sulcatum.

N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray), received an Award of Merit for Cattleya × Harold, obtained from C. Gaskelliana and C. Warscewiczii.

De B. Crawshay, Esq., of Sevenoaks, received an Award of Merit for Odontoglossum crispum, var. de Barri Crawshay, a splendid form. Two other handsome varieties of O. crispum, called Miss Florence Bovill and guttatum, were also exhibited.

W. F. Darnell, Esq., received a Silver Flora Medal for a fine group of showy Orchids, tastefully arranged with light foliage plants.

T. B. Haywood, Esq., Woodhatch, Reigate, sent a spike of Epidendrum Schomburgkii.

A. J. Hollington, Esq., Forty Hill, Enfield, exhibited a fine form of Cypripedium × Evenor (C. Argus ♀, × C. bellatulum ♂), with cream-yellow flowers densely spotted with purple.

C. Ingram, Esq., Elstead House, Godalming, showed Cypripedium × striatum.

C. Rickman, Esq., Springfield, received an Award of Merit for Cypripedium × Charles Rickman, from C. barbatum ♀ and C bellatulum ♂.

T. Statter, Esq., Stand Hall, Whitefield, Manchester, received a First-class Certificate for a splendid form of Dendrobium Bensoniæ album.

W. Thompson, Esq., Walton, Stone (gr. Mr. W. Stevens), sent spikes of two varieties of Odontoglossum triumphans.

R. B. White, Esq., Arddaroch, sent a form of Cypripedium concolor, the sepals and petals striped with purple.

Stephen White, Esq., Oakwood, Crayford, Kent, sent a fine spike of Cyrtopodium Andersonianum.

Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, showed Oncidium serratum, O. macranthum, Charlesworth's variety, and a curious little Peruvian Odontoglossum.

Messrs. Hugh Low and Co., Clapton, received an Award of Merit for Lælia purpurata Lowiana, a very handsome form.

Messrs. Pitcher and Manda received a Silver Banksian Medal for a large and handsome group, containing many forms of the variable Cattleya Mossiæ, Lælia pupurata, the pretty Cattleya Lueddemanniana concolor, Odontoglossums, Phalænopsis, etc.

Messrs. F. Sander and Co., St. Albans, showed a pretty form of Cypripedium Chamberlainianum, without the rose spotting on the pouch, called

Victoria-Mariæ, Oncidium leucochilum nigrum, and a group of other select and showy Orchids.

Messrs. James Veitch and Sons, Chelsea, exhibited Dendrobium × Mentor, a very pretty hybrid with pretty light rose flowers, derived from D. primulinum ♀ and D superbum ♂, and the very charming Lælio-cattleya × Hippolyta, derived from Cattleya Mossiæ ♀ and Lælia cinnabarina ♂.

THE TEMPLE SHOW.

THE Great Annual Flower Show of the Royal Horticultural Society was held in the Temple Gardens on May 25th and 26th, and, as is usually the case, the Orchids formed the leading feature. The broad stage running down the centre of the great marquee, one hundred feet long, was wholly occupied by these plants, also one side of a similar stage in a second large tent, while a few appeared here and there in the miscellaneous groups arranged round the sides of the tents. To give anything like a complete enumeration would be obviously impossible in the space at command, and we must content ourselves with pointing out the principal features of the various groups exhibited. So far as the commoner popular species are concerned one might say that they were well represented in almost every group, especially Lælia purpurata, Miltonia vexillaria, and some of the commoner Cattleyas and Odontoglossums, and many exceptionally brilliant varieties were exhibited.

Baron Sir Henry Schröder, The Dell, Egham (gr. Mr. H. Ballantine), staged a marvellous and tastefully arranged group, the plants in the most robust health, and the flowers of exceptional size and beauty, for which a Silver Cup was awarded. Odontoglossums were there in profusion, and included many superb varieties of O. crispum, including apiatum, Sanderianum, and xanthotes, and a superb white form in which the lateral sepals were united in nearly every flower of the raceme, giving it a very distinct appearance. Among superb forms of O. Pescatorei, a large pure white variety was conspicuous, superb forms of O. Hallii, O. cirrhosum, O. triumphans, the pretty little O. Œerstedii, and others, also a beautiful series of natural hybrids, including O. × elegans, O. × aspersum, and several forms of O. × excellens, O. × Andersonianum, and O. × Ruckerianum. Among Cattleyas were many fine plants of C. Mossiæ, the beautiful variety Reineckiana, a gigantic plant of C. Skinneri, with sixteen racemes, C. Mendeli, C. Lawrenceana, C. citrina, C. Warscewiczii, C. Schroederæ, and its variety alba, superb forms of Lælia purpurata, the snow-white Sobralia macrantha Kienastiana, Vanda teres, the beautiful Dendrobium Dearei, many handsome forms of Miltonia vexillaria, Selenipedium caudatum, several brilliant Masdevallias, including M. × Gairiana, M. Veitchiana, a

fine M. × Courtauldiana with sixteen flowers, M. Wageneriana with twice as many, a fine Cypripedium × Morganiæ burfordiense, the charming Epidendrum × dellense, and a large number of other handsome things. Some idea may be formed of the extent of this marvellous group from the fact that this and the next two collections occupied the whole of one side of the stage in the large marquee, and in nearly equal proportions. But the crowning figure of this marvellous group was a gigantic specimen of Cœlogyne Dayana, with twenty-two of its long and graceful pendulous spikes, containing over eight hundred flowers, to which a Silver Flora Medal and a First-class Certificate were awarded.

The next collection was that of Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gr. Mr. W. H. White), and this also was awarded a Silver Cup. This too was a magnificent group and most effectively arranged. In addition to a large number of the showy things found in every collection, there were numerous plants which call for special mention. Two plants of the new and handsome Cochlioda Noezliana were very effective, and show to what this charming plant may develop. A good plant of Nanodes Medusæ showed two of its quaint flowers with handsomely fringed lip. A tall plant of Epidendrum × O'Brienianum at the back carried seven trusses of its bright cherry-red flowers, while near it was a fine specimen of Sobralia macrantha, one of Phaius Sanderianus, some fine Vandas, Oncidium ampliatum, Odontoglossum hastilabium, a handsome Cypripedium Rothschildianum, with six flowers, and Epidendrum Mooreanum with a very graceful panicle of flowers. Here were many brilliant Masdevallias, including M. × Mundyana, M. × Veitchii, M. × Chelsoni, the quaint little M. simula, and M. peristeria; also a fine Lælia tenebrosa, some grand forms of L. purpurata, the pure white Cattleya intermedia Parthenia, C. × fimbriata, and most of the other showy Cattleyas now in flower. One of the most striking things was Lælio-cattleya × Phœbe, with orange sepals and petals, and a deep crimson lip. Many beautiful Odontoglossums, both species and hybrids, were included, among which O. × excellens, O. citrosmum, O. polyxanthum, and others, were conspicuous, also several Oncidiums, Brassia verrucosa, Anguloa Ruckeri, several Dendrobiums, Zygopetalum crinitum, the quaint Luisia volucris, and others too numerous to mention.

Messrs. F. Sander and Co., St. Albans, staged a most extensive and very beautiful group, in which Cattleyas in variety, Lælia purpurata, Phaius Sanderianus, Miltonia vexillaria, Odontoglossums, including O. citrosmum and O. crispum, and Epidendrum vitellinum figured in quantity. Of the latter there were between three and four hundred spikes, which made a most brilliant display. Three plants received Awards of Merit, namely, Miltonia vexillaria "Princess May," Odontoglossum Wattianum, Hardy's variety, and Lælia purpurata nobilius, all very handsome. Others worthy of mention were Lælia majalis, Cattleya × Wellsiana, and C. O'Brieniana splendida,

the three Anguloas, Oncidiums Forbesii and macranthum, Brassia verrucosa, Epidendrum prismatocarpum, etc., etc.

Norman C. Cookson, Esq., Oakwood, Wylam-on Tyne, received a First-class Certificate for the handsome hybrid Cattleya × William Murray (see p. 167).

De Barri Crawshay, Esq., Rosefield, Sevenoaks, showed Odontoglossum crispum "Princess May," a large and beautiful white variety.

Messrs. B. S. Williams and Son, Upper Holloway, received a Silver-gilt Flora Medal for a very effective group, containing, in addition to the usual showy things, fine plants of Cymbidium Lowianum, Dendrobium thyrsiflorum and Cattleya Lawrenceana, a splendid specimen with about forty flowers. The rare Bollea Patini, bearing one of its remarkable mauve flowers, was especially interesting, also Geodorum citrinum, Trichopilia marginata and Promenæa microptera.

Messrs. Hugh Low and Co., Clapton, also received a Silver-gilt Flora Medal, for an extensive and handsome group, containing a very rich and varied series of Cattleya Mossiæ, about ninety plants of the pretty little Cypripedium bellatulum, and many other splendid things too numerous to mention. Here was the very rare Cypripedium Mastersianum, a plant of C. exul, while the fine C. Volonteanum giganteum deservedly received an Award of Merit. Lælia tenebrosa, Renanthera bilinguis, and many other interesting things were in the group.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), staged a very fine group, to which a Silver Cup was awarded. It contained many rare and interesting things, as Grammatophyllums Rumphianum and Fenzlianum, Schomburgkia tibicinis, Cyrtopodium Andersoni, Aërides japonicum, Ornithocephalus grandiflorus, Oncidium phymatochilum, Gongora leucochila, and others, also Cattleya Forbesii and Lælia grandis, besides a host of other showy favourites. Epidendrum Claesianum received a Botanical Certificate.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), showed a plant of the handsome Lælio-cattleya Ingramii.

Mr. J. Cypher, Queen's Road, Cheltenham, received a Silver Cup for a very fine group, chiefly made up of specimens of the usual showy species previously enumerated. Lælia purpurata purpurea and L. p. Niobe both received Awards of Merit. These collections filled the other side of the stage in the large marquee.

In the second tent, Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, staged a very fine group, which was awarded a Silver-gilt Flora Medal. Here was a fine group of the handsome Lælia tenebrosa, another of Oncidium macranthum, a fine Cattleya Warneri formosa, which received an Award of Merit. Odontoglossum × Wilckeanum nobilius was very handsome, as was the pure white Cattleya intermedia alba, Cypri-

pedium Rothschildianum, several Odontoglossums, and others. Gongora Charlesworthii is a curious and interesting novelty.

His Grace the Duke of Northumberland, Syon House, Brentford (gr. Mr. G. Wythes), received a Silver Flora Medal for a very effective group, composed of numerous showy species.

Messrs. Pitcher and Manda, Swanley, Kent, received a Silver Cup for a very handsome group.

F. Wigan, Esq., Clare Lawn, East Sheen (gr. Mr. W. H. Young), received a Silver-gilt Knightian Medal for a neat and effective group, which contained the remarkable Lælia Digbyana with its deeply fringed lip, L. tenebrosa, Aërides Houlletianum, and a number of the usual showy species.

Messrs. W. L. Lewis and Co., of Southgate, received a Silver Flora Medal for an excellent group, containing the handsome Cypripedium × Evenor, the new Brassia Lewisii, Odontoglossum polyxanthum Lewisii, a good Cattleya citrina, and other showy things. A dark form of the handsome Vanda cœrulea was specially interesting, because this species is an autumn flowerer.

Hamar Bass, Esq., Byrkley, Burton-on-Trent (gr. Mr. J. Hamilton), received a Silver Knightian Medal for eight large and well-bloomed forms of Cattleya Mossiæ.

Messrs. Heath and Co., Cheltenham, exhibited five good plants of Lælia purpurata, Lælio-cattleya × Canhamiana raised by them, and a light form of Cattleya Mossiæ Hardyana.

Major-General E. S. Berkeley, Spetchley, Southampton, exhibited a group of about three dozen plants of Dendrobium amænum and a couple of D. Farmeri.

H. Shaw, Esq., of Ashton-under-Lyne, T. Statter, Esq., of Stand Hall, Whitefield, Manchester, and R. Young, Esq., Sefton Park, Liverpool, each exhibited very good forms of Cattleya Mendeli.

REPLIES TO CORRESPONDENTS.

(An addressed Post Card will ensure a reply by post.)

J. M., Barnsley.—The Cattleya Mossiæ sent is a pretty light form, but we are not sure if it has any varietal name. The forms are endless. Odontoglossum citrosmum with sepals and petals more rosy than usual.

H. J. R., Florence.—The Ansellia may be new. Next month.

J. T., Ashford, Kent.—Cattleya superba requires a little more heat than the others you name, which are usually grown together with success. There may be some other cause of failure.

T. C. H., Richmond, Yorkshire.—Many thanks. Next month.

A. H., Wilmslow.—Cypripedium spectabile occasionally has the dark-coloured lip. Cattleya Schroederæ. We will try to obtain the notes you mention.

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THE ORCHID REVIEW.

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NOTES.

THE Silver-gilt Flora Medal offered by the Royal Horticultural Society at its meeting on June 6th, for the best seedling Orchid not exhibited previous to January 1, 1893, was awarded to Messrs. F. Sander and Co., of St. Albans, for a very pretty little hybrid between Lælia pumila Dayana ♀ and Cattleya dolosa ♂, to which the name of Lælio-cattleya Maynardii has been given. A description of the plant is given in another column.

The show of Orchids on this occasion was somewhat smaller than usual, doubtless owing to the efforts made at the recent Temple Show; nevertheless a number of very attractive Orchids were exhibited.

One very pretty Orchid which figured on this occasion was Masdevallia × Veitchiano-Estradæ, a hybrid raised by Captain Hincks, of Terrace House, Richmond, Yorkshire, whose parentage is commemorated in its name. The plant is at present very small, but the flower is a beautiful deep apricot, or nearly orange colour, studded with iridescent amethyst-coloured hairs.

Masdevallias are favourites with Captain Hincks. For some time he has been engaged in hybridising them, and with considerable success, as M. × Hincksiana, M. × Stella, and M. × Cassiope, have all originated in his collection. Another handsome hybrid between M. ignea and M. racemosa has also just flowered, as will be seen by the description on another page.

Disa × kewensis is a very interesting hybrid which has just flowered at Kew, from seed sown in November, 1891. The first flower opened in May, when the plant was eighteen months old, and therefore beats the record for quickness of flowering from the time of sowing the seed. It is a pretty

little plant, and will doubtless prove as easy to cultivate and as floriferous as its two parents, which are said to be Disa grandiflora and D. tripetaloides.

Two other interesting crosses were made at the same time, and a fine batch of seedlings is the result. The second cross was between D. racemosa and D. tripetaloides, and the third between D. tripetaloides and D. × Veitchii. The latter cross is a very interesting one, as all three species are concerned in the parentage, D. × Veitchii itself being derived from D. grandiflora and D. racemosa. Only one seedling has yet flowered, but next season should witness some developments.

When the handsome Disa × Veitchii flowered, in the establishment of Messrs. James Veitch and Sons, of Chelsea, in a year and nine months from the time the seed was sown, it established a record, but it is now evident that some of these Disas flower very quickly, and those who wish to see the result of their labours within a reasonable period should make a note of the fact.

Speaking of D. × Veitchii, we notice that Messrs. Backhouse, of York, have also raised a batch of it, some plants being exhibited at the Royal Horticultural Society's meeting on June 20th last.

Two meetings of the Royal Horticultural Society will be held during July, on the 11th and 25th respectively; the former meeting, however, will be held at the Society's Gardens, at Chiswick, and the latter at the Drill Hall, James Street, Westminster. The Orchid Committee will meet on each occasion, and, as usual, Certificates are offered for new or rare plants.

The new Eulophiella Elisabethæ was offered for sale on June 9th, by Messrs. Protheroe and Morris, on behalf of Messrs. F. Sander and Co., of St. Albans. About sixty plants were included in the Catalogue. Others are announced to be offered on July 7th next.

At the great York Gala, held on June 14th to 16th, there was a fine display of Orchids, and the various classes were well filled. Gold Medals were awarded to two very fine non-competing groups, staged by Messrs. Charlesworth, Shuttleworth, and Co., and Messrs. F. Sander and Co., of St. Albans, respectively. For the best ten Orchids the competition was very close, the first prize being ultimately awarded to Mr. J. Cypher, of Cheltenham, and the second to G. Hardy, Esq., of Pickering Lodge, Timperley, Cheshire.

THE HISTORY OF ORCHID HYBRIDISATION.

PART VI.

(*Continued from page* 134.)

ZYGO-COLAX × VEITCHII, a remarkable and very handsome generic hybrid, flowered in 1887 for the first time. It was raised by Mr. Seden from *Zygopetalum crinitum* fertilised with the pollen of Colax jugosus. The seed was sown in September, 1882, and the first flowers produced in March, 1887, the plant being a little over five years old. The appearance of this hybrid marks the commencement of a new era in the history of Orchid hybridisation, as it led to an extension of the principle of compounding a new name, derived from the joint names of the parent genera, to all the generic hybrids raised in gardens.[1] Hitherto they had usually been referred to one or the other of the parent genera, but with very unsatisfactory results, as we have already seen in one or two instances.

Another hybrid between Phaius and Calanthe flowered in 1887, and was described as Phaius × Sedenianus by Reichenbach, who called it the fourth member of the group, though only one other appears to be on record. The present one was raised by Mr. Seden by crossing Phaius grandifolius with the pollen of Calanthe × Veitchii.

Phalænopsis × Rothschildiana, the second hybrid in the genus, was an extremely interesting acquisition. It was obtained by Mr. Seden from "P. Schilleriana and P. amabilis, Lindl." *i.e.*, P. Aphrodite, Rchb. f., the supposed parents of the natural hybrid P. × leucorrhoda. Reichenbach observed that its flowers were much like those of P. × leucorrhoda in shape, and that it was no doubt of the same origin. The Malayan P. amabilis, Blume (P. grandiflora, Lindl.), the original species of the genus, has since been recorded as the pollen parent, by Messrs. Veitch. This would account for the differences observed between it and P. × leucorrhoda, for the two are not identical, whether the parentage is the same or otherwise. The novelty was named P. × Rothschildiana, in honour of Lord Rothschild, of Tring Park.

A third Phalænopsis flowered almost immediately afterwards, derived from P. amabilis, Blume ♀ and P. violacea ♂. It was named P. × Harriettæ, in compliment to the daughter of the Hon. Erastus Corning, of Albany, U.S.A. It is not only very handsome, but botanically interesting from the fact that the two parent species belong to quite different sections of the genus. It was raised by Mr. Seden in Messrs. Veitch's establishment.

Other hybrids described during 1887 were as follows:—

From the establishment of Messrs. James Veitch and Sons, of Chelsea:—

[1] See R. A. Rolfe. "On Bigeneric Orchid Hybrids," in *Journ. Linn. Soc.*, xxiv., pp. 156–170.

Dendrobium × Cybele, derived from D. Findlayanum ♀ and D. nobile ♂, a very pretty hybrid most resembling the pollen parent.

Cattleya × suavior, derived from C. intermedia ♀ and C. Mendeli ♂, a delicately coloured and pretty hybrid.

Cattleya × Zenobia, a handsome hybrid derived from Cattleya Loddigesii ♀ and Lælia × elegans Turneri ♂, which flowered when seven years old.

Lælia × Timorra, derived from Lælia pumila Dayana ♀ and Cattleya Lueddemanniana ♂; the flowers rather larger than in the former, and modified in colour.

Cypripedium × obscurum, described as a plant of obscure origin, but since considered synonymous with C. × Ashburtoniæ (p. 37).

From the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, came the following five Cypripediums:—

C. × plunerum; parentage doubtful, but supposed to be C. venustum and C. villosum. Thus it may be a variety of C. × Williamsianum. Reichenbach compared it with C. × patens, though it shows no evidence of descent from C. Hookeræ and C. barbatum.

C. × auroreum, derived from C. Lawrenceanum ♀ and C. venustum ♂, and intermediate in character.

C. × lineolare; origin not stated, but the plant is compared with C. × Williamsianum. It may have been derived from the same parentage as C. × plunerum.

C. × doliare, said to be near C. × plunerum, and possibly even from the same seed-pod.

C. × almum, derived from C. barbatum and C. Lawrenceanum. It is not stated which was the seed parent.

From the collection of D. O. Drewett, Esq., Riding, Mill-on-Tyne, came two Cypripediums:—

C. × delicatulum, derived from C. Dayanum ♀ and C. barbatum Warnerianum ♂, and thus a variety of C. × Swanianum, in which the ordinary C. barbatum was used. Reichenbach speaks of it as the "inverted" cross, but C. Dayanum is recorded as the seed parent in each case.

C. × pleistochlorum, derived from C. barbatum ♀ and C. virens ♂, and thus the first hybrid in whose parentage the latter had participated.

From the collection of J. C. Bowring, Esq., Forest Farm, Windsor, came—

Cypripedium × amandum, derived from C. insigne and C. venustum, and thus a variety of C. × Crossianum (p. 37), which it closely resembles.

Lastly, from the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, came three Dendrobiums:—

D. × chrysodiscus, a very charming hybrid, said to have been raised from D. Findlayanum crossed with the pollen of D. × Ainsworthii, and

thus the first secondary hybrid obtained in the genus. It flowered when five years old.

D. × melanodiscus, said to have the inverted parentage of the preceding, D. × Ainsworthii in this case being the seed parent. It is very elegant, and remarkably different from D. × chrysodiscus.

D. × chlorostele, derived from D. Linawianum and D. Wardianum, but it is not recorded which was the seed parent. The stems are described as like those of the former.

A hybrid Lycaste flowered as long ago as 1878, though it received no name, and has been previously overlooked. It was raised by Mr. W. Marshall, of Enfield, according to the *Gardeners' Chronicle*, "some nine or ten years since, between L. Skinneri and L. Deppei, and it is, we believe, the second which has as yet been flowered." It has since been named Lycaste × hybrida. We fail to find a record of any earlier one, and think it must be the first recorded hybrid in the genus, and hence extremely interesting, but we fear it has since been lost sight of.

The first hybrid Anguloa appeared in 1881, and this too has been overlooked. It was raised in the collection of J. C. Bowring, Esq., of Forest Farm, Windsor Forest. Reichenbach named it Anguloa × media, and spoke of it as no doubt derived from A. Clowesii and A. Ruckeri. It is believed that the plant died soon after flowering.

(*To be continued.*)

SOBRALIA MACRANTHA KIENASTIANA.

This is a most beautiful variety of Sobralia macrantha, whose flowers are of the purest white, with the exception of the throat, which is lemon-yellow. Our first knowledge of the plant was obtained from Herr Kienast Zolly, of Hirslanden, Zurich, who received from his collector, in 1885, a Sobralia whose flowers were said to be very large and very white. And so it proved, for when it flowered for the first time in Europe in the summer of 1889, the flowers were seen to be white, and of the utmost purity, though in every other respect quite typical. A very beautiful example of the same has been sent to us by R. H. Measures, Esq., of The Woodlands, Streatham, under the name of Sobralia macrantha alba, which is certainly identical with the above, and though the name is more descriptive, we feel bound to adopt the original one. This chaste and very beautiful variety is still very rare, though it should ultimately become as common as the typical form. We have seen a splendid plant in the collection of Baron Sir Henry Schröder, at The Dell, Egham.

Sobralia macrantha var. Kienastiana, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 296

NOVELTIES.

GONGORA CHARLESWORTHII, Rolfe.—This is a new Gongora which was imported some time ago by Messrs. Charlesworth, Shuttleworth, and Co., of Heaton, Bradford, with whom it has flowered on more than one occasion. It was exhibited by them at the recent Temple Show. I am not sure of its native country. It stands next to G. truncata, Lindl., a very rare species, which has recently reappeared in cultivation. It is named in honour of Mr. J. Charlesworth, one of the partners in the firm. The flowers are nearly white, barred with a very light brownish purple of a peculiar shade on the sepals. Its characters are set forth in the subjoined description :—

Habit of Gongora truncata, Lindl. Leaves broadly lanceolate, plicate ; about a foot long by 2¼ inches broad. Scape arching, about 1¼-1½ feet long, 16–20-flowered. Bracts lanceolate, 3 lin. long. Pedicels 1¼ inches long. Dorsal sepal adnate to column for 2 lines at base, limb broadly elliptical-lanceolate, acute, 7 lin. long by 4 lin. broad ; lateral ones broadly rhomboid-ovate, subacuminate, 9–10 lin. long by 8 lin. broad. Petals oblong, obliquely truncate, minutely aristate, free part 1½ lin. long, with a decurrant wing to base of column on either side. Lip curved, laterally compressed ; front lobe ovate-lanceolate, acuminate, conduplicate, side lobes oblong, directed backwards ; sides of lip with a curved keel terminating behind the crest in a slender bristle ½ lin. long ; crest consisting of a square thin plate 1 lin. long. Column arcuate, clavate, 7 lin. long.

CATTLEYA INTERMEDIA VAR. PICTURATA, Rolfe.—A new and very pretty variety of Cattleya intermedia has just flowered in the collection of MM. Cappe et fils, of Vésinet, Seine-et-Oise, France. Its peculiarity consists in the possession of a number of rosy streaks and splashes in the pale blush sepals and petals, and the side lobes of the lip heavily flaked and striped with bright amethyst-purple, like the front lobe. In some flowers the original blush pink of the side lobes only remains as a few irregular streaks. This extension of the brilliant colour of the front lobe to the very base of the lip imparts to the flower a very distinctive appearance, and renders it very bright and attractive. The plant appeared in an importation made in 1890, and flowered for the first time in 1892, when it presented the peculiarities above pointed out, and these were repeated in 1893 ; it is evident that the character is permanent. On each occasion the variegation has been present on every flower in the inflorescence. Several other varieties of this species are known. The original form had the sepals and petals pale amethyst-purple ; but this appears to be much rarer than the one in which they are white, which Lindley called variety pallida. This appears to be the commonest form of the species. In the variety Parthenia, the flower is wholly milk-white, all the brilliant colour having vanished from the front lobe of the lip. In the variety punctatissima, the sepals and petals are spotted with numerous rosy purple spots. One other curious form has been called variety prolifera ; but it is an abnormal state of the species, with proliferous flowers, rather than a true variety.

BRASSIA LEWISII, Rolfe.—This pretty little Brassia flowered with Messrs. W. L. Lewis and Co., of Southgate, by whom it was exhibited at the recent Temple Show. Its exact habitat is not known; but the plants were purchased from a man who collected them when searching for Cattleyas, and who has since died. It is much like a small compact form of B. macrostachya, Lindl., next which it may be placed. Lindley, indeed, afterwards reduced this and B. pumila, Linden, to the rank of varieties of B. Lanceana, Lindl., which, however, leaves their acknowledged differences just where they were. And the present form is equally distinct. It agrees with B. pumila in the presence of a pair of erect teeth in front of the crest, but its lip is not pandurate, and the colour is different. It has a compact raceme of about eleven flowers, whose characters are given in the technical description below:—

Pseudobulb oblong, compressed, 2½ in. long. Leaves linear-oblong, subacute, 5–6 inches long, 1¼ in. broad. Raceme a little longer than the leaves, 10–12 flowered. Bracts lanceolate-ovate, acute, 3 lin. long. Sepals lanceolate, caudate-acuminate, greenish yellow with a few small dusky-brown spots at base; the dorsal one 1¼–1½ in. long, laterals 2–3 in. long. Petals subfalcate, acuminate, ¾ in. long, rather more spotted than the sepals. Lip ovate-elliptical, acuminate, 1 in. long, 5 lin. broad, light yellow, with a pair of parallel fleshy pubescent almost truncate keels, which are white and marbled with orange on their inner sides, and a pair of erect teeth in front. Column stout, light green, 2½ lin. long. This graceful little plant is dedicated to Mr. Lewis.

ANSELLIA NILOTICA, N. E. Br., VAR. ROSSIANA, Rolfe.—A bright and pretty Ansellia has just flowered in the collection of H. J. Ross, Esq., of Florence, which appears to be a very light-coloured form of A. nilotica, and may therefore bear the above name. It is said to be from the Zambesi district, and at present to be rather dwarf for an Ansellia. The shape of the flower, including the lip with its spathulate front lobe and three keels, is that of the type, but the colour is primrose-yellow, and the spots smaller, less numerous, and lighter brown in colour. A. nilotica is from the Nile district, but I think this Zambesi plant must be considered as a variety of the same.

ODONTOGLOSSUM × BAPHICANTHUM, Rchb. f., VAR. IMMACULATUM, Rolfe.—A very pretty little Odontoglossum has flowered with Messrs. F. Sander and Co., of St. Albans, with primrose-yellow flowers, slightly suffused with rosy mauve, especially on the lateral sepals. In fact, it is just an unspotted form of O. × baphicanthum. It is an elegant little plant, and of course a form of O. × glorioso-crispum.

LÆLIA PURPURATA, Lindl., VAR. DISCOLOR, Rolfe.—In the collection of W. Brown, Esq., Holly Lawn, Beech Lanes, Birmingham, is a handsome and quite unusual form of Lælia purpurata. The sepals are blush-white, and the petals beautifully veined and suffused with purple, which is brightest

towards the apex. The contrast is very effective. The character seems constant, as the plant has shown the peculiarity for four years in succession, since it was originally imported. The lip is normal in colour.

ODONTOGLOSSUM KRAMERI ALBUM, Rolfe.—An albino of the pretty little Costa Rican Odontoglossum Krameri has now appeared, having just flowered in the Kew collection. As the rose-purple colour has entirely vanished, leaving only the deep yellow crest and a small yellow area in front of the same, the flower, at the first glance, looks more like the allied O. Œrstedii. The resemblance, however, is limited to colour; for the structure of the flower and the vegetative organs are precisely those of O. Krameri. It is a pretty little plant, and very interesting on account of its marked difference in colour.

NEODRYAS SACCIANA, L. Lind. et Cogn.—A new species of an interesting little genus closely allied to Mesospinidium. It is a native of Bolivia, and was sent in 1890 to Messrs. Linden, of Brussels, by Prof. Sacc, of Cochabamba, after whom it is named. The habit is like that of a small Oncidium, the flowers small, with the sepals and petals dull purple, and the lip orange-coloured.—Cogn. in *Journ. des Orch.*, May 15th, p. 73.

ONCIDIUM ZONATUM, Cogn.—A Columbian species introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it has flowered. It belongs to the set with heteromorphous flowers, and is allied to O. bryolophotum, Rchb. f. The sepals are white and the petals yellow, with transverse brown bands.—Cogn. in *Journ. des Orch.*, May 15th, p. 76.

CYMBIDIUM GRANDIFLORUM, Griff., VAR. PUNCTATUM, Cogn.—A variety in which the spots on the lip are smaller and more numerous than usual, and the sepals and petals are also spotted at the base. It appeared with Messrs. Linden, of Brussels.—Cogn. in *Journ. des Orch.*, May 15th, p. 76.

LÆLIA TENEBROSA, MARLFIELD VARIETY.

Many good forms of the handsome Lælia tenebrosa have recently flowered in various collections, but one which bears the above name is specially fine. The sepals and petals are of a deep coppery purple, the latter three and a half inches long by nearly one and a half broad, and the lip three and a quarter inches long by two and a half broad. The throat is intense deep velvety maroon, with darker nerves, and the margin lilac-purple. A flower has been received from R. le Doux, Esq., of West Derby, Liverpool.

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 174.)

OUR last paper contained an account of the multitudinous forms of Odontoglossum × glorioso-crispum, and as a few others were discovered when too late, they may be included here. It is quite possible that others will yet come to light.

In the series of coloured plates issued with the Sale Catalogues of the Fernside Collection in 1891 and 1893, a few forms occur which are not named in accordance with the preceding paper, and may therefore be mentioned here, as these plates are likely to be preserved by many for future reference. The plates were issued without numbers, and it is by no means an easy matter to find any given plant, but if the reader will number them consecutively from one to eight in each, he will be able to refer immediately to anything here cited.

In the 1891 Catalogue may be noted :—

"O. hybrid," p. 19, n. (or "lot") 526, t. 2, fig. 59.—A dark spotted form with broad segments, somewhat intermediate between O. × Andersonianum and O. × Rickerianum, but most resembling the latter.

In the 1893 Catalogue may be found :—

"O. Alexandræ," p. 9, n. 156, t. 1, fig. 19.—A good O. × Andersonianum.

"O. Alexandræ," p. 12, n. 221, t. 2, fig. 44.—A very remarkable form of O. × Andersonianum with many violet spots.

"O. Alexandræ," p. 10, n. 188, t. 5, fig. 173.—A form of O. × Andersonianum.

"O. × Andersonianum," p. 14, n. 293, t. 7, fig. 93.—One of the forms of O. × deltoglossum, which, of course, may be called O. × Andersonianum with yellow ground.

Other forms figured in these Catalogues will be mentioned in their proper places.

I now believe that O. × Scottii was wrongly included under O. glorioso-crispum, as I have found a second note about it, in consequence of which it had better be transferred to the following. The descriptions, however, are very meagre, and a flower of it would be very acceptable.

ODONTOGLOSSUM × LUTEOPURPUREO-CRISPUM.—Continuing our investigation of the hybrids partly derived from Odontoglossum crispum, we may next consider the combination with O. luteopurpureum. This, too, is very common in cultivation, and some of the best forms occupy the premier position among hybrid Odontoglossums as regards beauty. It is also specially interesting as the first one whose parentage was proved by direct experiment.

Odontoglossum luteopurpureum is a very widely diffused and variable species. It occurs both on the eastern and central Cordilleras of New Granada, occurring on the former from about one hundred miles south of Bogota to as far north as Ocana, and on the latter from Quindiu to Medellin.

It is, however, only in the Bogota district, where its area overlaps that of O. crispum, that this particular hybrid occurs. In fact, almost every plant now in cultivation has flowered quite unexpectedly among importations of the latter.

The appearance of this hybrid dates from 1872, when a very beautiful Odontoglossum flowered in Lord Londesborough's collection, and was named O. Denisoniæ, in compliment to Lady Londesborough. It was awarded a First-class Certificate by the Royal Horticultural Society on January 17th of that year. It is recorded that it was at first thought to be a white variety of O. luteopurpureum. It bore a branched inflorescence with nineteen flowers, the ground colour white, with a few light brown spots on the sepals and petals, and the disc of the lip lemon-yellow. Mr. Denning, the gardener, afterwards stated that it flowered in an importation of O. crispum made by Messrs. Backhouse, of York, three years before, and was secured by Lord Londesborough. Mr. Denning considered it to be a natural hybrid between O. luteopurpureum or O. hystrix (a variety of the same) and O. crispum, because the branching inflorescence, the long tapering sepals and petals, the strong growth and the general contour of the plant and flowers, all bore a considerable resemblance to the former, while the colour was almost that of the latter. The coloured plate quite confirms this opinion.

Its next appearance was in 1880, in the collection of M. Massange de Louvrex, of Baillonville, near Marche, Belgium. Some plants of O. crispum, imported in 1878 by Messrs. Hugh Low and Co., of Clapton, passed into this collection, and one on flowering proved to be quite distinct, and was therefore sent to Prof. Reichenbach, who named it O. × Wilckeanum, in honour of M. Massange's gardener, and at the same time indicated its hybrid origin and parentage. This had the sepals and petals of the lightest whitish yellow, blotched with brown, and the lip much like that of O. crispum, but with some brown blotches, and an approach to O. luteopurpureum in the crest.

A second plant soon afterwards flowered in the same collection; then it appeared successively with Mr. Calvert, of Wood Green, near London, William Lee, Esq., of Leatherhead, and the Right Hon. J. Chamberlain, of Highbury, near Birmingham. Mr. Lee's plant was called variety varians, on account of its nearly white ground colour. Many other varieties have since appeared, some of which have received distinctive varietal names, while a few have been described as distinct. These we may now consider.

In 1882 a plant was figured in the *Gardeners' Chronicle* as Odontoglossum × lyroglossum, Rchb. f., but it does not represent the true plant of that name, as we shall hereafter see. It flowered in the collection of William Lee, Esq., of Leatherhead. The flowers are bright yellow with chestnut-brown blotches, and have more of the luteopurpureum character than usual.

O. × Scottii was included under O. × glorioso-crispum, but probably belongs here, as, in a note formerly overlooked, Mr. O'Brien speaks of it as resembling O. × prionopetalum in its jagged petals, though the markings are more irregular, and the crest bears traces of O. Hallii. But O. Hallii grows too far away, and the crest of O. luteopurpureum is very similar. The flowers are heavily spotted and barred with brown on a cream-yellow ground. It appeared with G. F. Wilson, Esq., of Heatherbank, Weybridge, and received a First-class Certificate from the Royal Horticultural Society in March, 1883.

In 1884 another form appeared, evidently of the same origin, though it received the name of O. × macrospilum. It was exhibited by Mr. B. S. Williams, of Upper Holloway, at a meeting of the Royal Horticultural Society on March 25th, and received a First-class Certificate. Its flowers were said to be like those of O. crispum, white faintly shaded with violet, and boldly spotted with chestnut-red. In the following year it was described by Reichenbach, two forms being mentioned, one with light sulphur flowers heavily blotched with dark cinnamon, from M. Ch. Vuylsteke, of Ghent, said to be original, and another from Mr. Day, which would appear to be Mr. Williams's plant just mentioned.

O. × Shuttleworthii also appeared in 1884, being exhibited by Messrs. Shuttleworth, Carder, and Co., of Clapham, at a meeting of the Royal Horticultural Society on April 8th, when it received a First-class Certificate. The flowers are whitish, heavily blotched with chocolate or warm brown.

O. × prionopetalum, which was briefly described in 1885, has probably the same origin. It appeared in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking. It has primrose flowers heavily barred with bright chestnut, the shape much like O. crispum, and with jagged petals. Traces of O. triumphans are spoken of, but this must be a mere accidental resemblance, as the two grow in different regions.

O. × Smeeanum appeared in the collection of A. H. Smee, Esq., of Carshalton, and has a rather curious history, which is related by Mr. Smee. In 1886 it was purchased from Messrs. F. Sander and Co., of St. Albans, as new. "A flower was sent to Prof. Reichenbach to be named, and he called it O. × Marriottianum. Under this name it was exhibited at one of the Royal Horticultural Society's meetings, when the name was challenged by Mr. Pollett and Mr. Marriott. I again sent a flower to Prof. Reichenbach, who then called it O. × Wilckeanum; Mr. Veitch called it O. × Wilckeanum variety; Mr. O'Brien called it O. × Marriottianum; and this year Mr. Rolfe has called it O. × Andersonianum variety." [1] This alone would indicate the difficulty of determining some of these intermediate forms, were

[1] The comparison was made with *Floral Magazine*, n. s., t. 45, which shows the flowers fully 3½ inches across, and the petals nine to ten lines broad, such a form of O. × Andersonianum as I think I have never seen. It is a case of mistaken identity, nevertheless.

no other evidence forthcoming. But it is now clear that O. × Smeeanum is a form of the present hybrid, with a white ground and deep red-brown blotches. O. × Marriottianum is an Ecuadorean hybrid, and though known from description only is evidently different.

O. × Leroyanum is a most interesting plant, being the first hybrid Odontoglossum raised artificially, or at all events the first that reached the flowering stage. It was raised by M. Leroy, in the collection of Baron Edmond de Rothschild, of Armainvilliers, near Paris, from O. crispum ♀ and O. luteopurpureum ♂. It flowered in May, 1890, when five and a half years old. The ground colour of the flowers is white, the blotches on the sepals and petals reddish purple, very large, and nearly confluent. That it proves the parentage of the series of hybrids we are now considering is certain; it has all the essential characteristics, though it may not be absolutely identical with any of them in a florist's sense. But scarcely any two are ever exactly alike.

O. × Claesianum appeared with Messrs. Linden, of Brussels, in 1891, and has broad sepals and petals, heavily blotched with red-brown on a white ground.

O. × Bergmani also appeared in 1891, in the collection under the charge of M. F. Bergman, at Ferrières-en-Brie, near Paris. It has much of the O. luteopurpureum shape, but a white ground, blotched with cinnamon-brown.

With respect to the acknowledged varieties of O. × Wilckeanum not mentioned above, we have only space to say a few words. The variety albens has a white ground with chestnut-brown spots, and is nearest O. crispum in shape. O. × W. elegans has longer and narrower segments, of primrose colour, with a very few spots, which are chiefly confined to the sepals. Godefroyæ is very heavily blotched with violet-purple on a light ground. The one called pallens has the luteopurpureum shape, toothed petals, and a whitish ground with large brown blotches. Rothschildianum is a superb form with the crispum shape, a light yellow ground and large red-brown blotches. The variety sulphureum has primrose, almost unspotted flowers of intermediate shape. Lastly, the one called varians chiefly differs from the original form in having a white ground.

In the Fernside Catalogues mentioned at the head of this article, several forms of the present hybrid occur under other names, which belong here.

In the 1891 Catalogue we may note:—

"O. crispum flaveolum," p. 19, n. 498, t. 1, fig. 13.—This is very near O. × Wilckeanum elegans and O. × W. sulphureum, having longish segments of primrose colour with a few spots on the sepals only, and the characteristic crest.

"O. Alexandræ bickleyense," p. 6, n. 99, t. 5, fig. 101 (also "O. × bickleyense," p. 18, n. 467).—A fine form of O. × Wilckeanum with cinnamon-brown spots on a nearly white ground.

Without name, t. 3, fig. 99.—This is another form of O. × Wilckeanum with white

ground and cinnamon-brown blotches. Its number appears not to be indicated in the Catalogue.

In the 1893 Catalogue occur :—

"O. Alexandræ," p 10, n. 179, t. 2, fig. 15.—A form very near to O. × Wilckeanum sulphureum or O. × W. elegans, with sulphur-coloured flowers and one or two brown spots on the sepals.

"O. Alexandræ," p. 10, n. 194, t. 5. fig. 177.—A small O. × Wilckeanum with light yellow flowers and cinnamon spots.

"O. × bickleyense," p. 11, n. 197, t. 6, fig. 58.—See O. Alexandræ bickleyense, above.

It is highly probable that some of the so-called varieties of O. crispum (or Alexandræ) in other collections are really forms of the present hybrid, as I have found them so labelled on several occasions. Errors of this kind should be rectified as soon as discovered, as no hybrid can possibly be considered as a variety of either parent.

Considering the present hybrid as a whole, it is remarkable what a wide range of variation it presents. Just as in the case of O. × glorioso-crispum, there appears to be almost every possible combination of the characters of the two parent species. The robust habit, branched inflorescence, and more elongated segments of O. luteopurpureum may be combined with the white ground of O. crispum, and with the heavy spotting of the former, or almost without spots, as in so many forms of the latter. Or the compact habit of O. crispum may be coupled with the yellow colour and brown blotches of the other parent, while all kinds of intermediate forms occur, both in shape and colour. It is now quite certain that this hybrid is more polymorphic and polychromic than is generally supposed.

The following is a list of its various forms, with references to published descriptions and figures. It is pretty extensive, but we dare not hope it is complete :—

Odontoglossum × Denisoniæ, Denning, *Fl. Mag.*, n. s., 1872, t. 26.

O. × Wilckeanum, Rchb. f. in *Gard. Chron.*, 1880, i. p. 298; 1884, i. p. 640, fig. 122; 1885, ii. p 205, fig. 43; 1886, i. p. 76, fig. 14: *Warn. Sel. Orch.*, ser. 3, t. 23; *Veitch. Man. Orch.*, i. p. 78, with fig.

Var. albens, Rchb. f., *Orchidophile*, 1885, p. 132, fig. 2; *Lindenia*, i. p. 75, t. 35; O'Brien in *Gard. Chron.*, 1886, i. p. 76.

Var. elegans, Rolfe in *Orchid Review*, i. p. 135.

Var. Godefroyæ, O'Brien in *Gard. Chron.*, 1886, i. p. 76.

Var. Leroyanum, Rolfe in *Reichenbachia*, ser. 2, i. p. 47; also p. 77, t. 37. Odontoglossum × Leroyanum, Castle in *Gard. Chron.*, 1890, i. p. 704: *Orchidophile*, 1891, p. 112, with plate.

Var. lyroglossum, O'Brien in *Gard. Chron.*, 1886, i. pp. 76, 77, fig. 15. O. lyroglossum, Hort., *Gard. Chron.*, 1882, i. p. 632, fig. 97, also supplementary plate (not of Rchb. f.); *Will. Orch. Gr. Man.*, ed. 6, pp. 449, 450, with fig.

Var. pallens, Rchb. f. ex. *Orchid Album*, v., t. 201; O'Brien in *Gard. Chron.*, 1886, i. p. 76.

Var. Rothschildianum, Sander ex Rolfe in *Reichenbachia*, ser. 2, i. p. 47, t. 22. O. crispum Rothschildianum, Hort., *Gard. Chron.*, 1890, i. p. 684 (in note).

Var. Smeeanum, Rolfe. O. × Smeeanum, Hort., *Gardening World*, 1890, p. 652. O. Marriottianum (?) Smee, *l.c.*, 1889, p. 677, with fig.

Var. sulphureum, Rchb. f. in *Gard. Chron.*, 1884, i. p. 306.
Var. varians, Rchb. f. in *Gard. Chron.*, 1881, i. p. 330.
O. × Bergmanii, L. Lind. in *Lindenia*, vi. p. 95, t. 286.
O. × Claesianum, L. Lind. in *Lindenia*, vi. p. 65, t. 271.
O. × macrospilum, Rchb. f. in *Gard. Chron.*, 1885, ii. p. 70; O'Brien, *l.c.*, p. 620 *Orchidophile*, 1885, p. 132, fig. 9.
O. × prionopetalum, O'Brien in *Gard. Chron.*, 1885, ii. p. 620.
O. × Scottii, Hort., *Gard. Chron.*, 1883, i. p. 222; O'Brien, *l.c.*, 1885, ii. p. 620.
Odontoglossum × Shuttleworthii, Hort., *Gard. Chron.*, 1884, i. p. 490; O'Brien, *l.c.* 1885, ii. p. 620.

R. A. R.

(*To be continued.*)

MASDEVALLIA CHIMÆRA VAR. VANNERIANA.

At last we have a seedling Masdevallia of the section Saccolabiatæ, though it is a little doubtful whether, strictly speaking, it can be called a hybrid. It was obtained in the collection of W. Vanner, Esq., Camden Wood, Chislehurst (gr. Mr. W. H. Robbins) from Masdevallia Chimæra var. Wallisii crossed with the pollen of M. C. var. Roezlii. Both these, with several others, were originally described as distinct species, but so many intermediate forms have since appeared that the differences originally relied on have been obliterated, and as no new ones have yet been discovered, all have been reduced as varieties of one very polymorphic species, the original M. Chimæra. We must therefore consider our new seedling as a variety also, for which the above name is proposed. It has the general shape of the first named, the sepals ovate, very hairy, an inch and a half long, and the tails as much longer. The ground colour is very light, almost pale drab, and covered with numerous dull liver-coloured spots, which are somewhat confluent towards the margins. The whitish hairs are reduced to papillæ on the disc of the sepals. The lip is pale flesh-coloured. It is intermediate in character between the two parents. The lip, petals, and column are too similar in the different varieties of M. Chimæra to enable any distinctive characters in these organs to be traced. Experiments have shown that it is a very difficult matter to effect a cross between the species of the section Saccolabiatæ with the brilliantly-coloured species of the section Coccineæ, though it would be rash at present to affirm its impossibility. Could the cross be effected, something remarkable would probably result. But it would be an interesting matter to cross the best forms of M. Chimæra on to the very floriferous M. Benedicti, which is often seen perfectly wreathed with flowers. And the cross with M. bella, M. Carderi and M. Chestertoni might also be tried, as it is probable that the same difficulties would not be found in crossing the species belonging to the same section, and some interesting forms would be sure to result.

EULOPHIELLA ELISABETHÆ.

A LITTLE over a year ago this remarkable plant flowered in Europe for the first time, in the houses of Messrs. Linden, L'Horticulture Internationale, Brussels, and on careful examination it proved to be quite distinct from anything hitherto known, and a new genus was created for its reception. As in the case of other striking plants, nothing was divulged with regard to its habitat, though information on this, and other points, has now come to hand, which enables me to add another chapter to its history. This information comes from another source, which, however, is a matter of secondary importance, for the discovery and introduction of a species, though interesting, is only one phase of its history. Messrs. F. Sander and Co., of St. Albans, have now received a batch of plants from M. L. Hamelin, a French gentleman resident in Madagascar, who is said to have been the original discoverer of the species. From an examination of some of the plants from this importation, including scapes, leaves, and the very characteristic stems, densely clothed with the fibrous persistent remains of the old leaves, it is quite certain that the species is not terrestrial, as I formerly inferred. In fact, the roots are clinging to the remains of fern-stems, on which they have certainly grown. It is therefore evident that the plant really grows on tree-ferns, of which about thirty species, mostly Cyatheas, grow in Madagascar. M. Hamelin states that it grows on one species of tree, and in popular language tree-ferns come sufficiently under this definition. The point is an important one, because those who obtain plants will want to know how to cultivate them.

It is now evident that the Eulophiella Elisabethæ climbs something in the same way as does *Zygopetalum* maxillare, and one or two of its allies. The stems or pseudobulbs have numerous annular rings, each bearing a leaf, which on decaying leaves a ring of persistent fibres. The leaves are linear-lanceolate, and plicate, those measured being four feet long and two inches broad. The scapes measured two and a half feet long, and showed the scars of forty flowers, which are borne in a raceme. The scape and bracts are of a peculiar lurid or vinous purple, and the back of the sepals is also stained with the same colour. The rest of the flower is white, except the disc of the front lobe of the lip which is bright yellow, and on it are several short, bristle-like processes directed forwards. The flower is nearly circular, by reason of the broad, obtuse sepals and petals. The lip is delicately articulated to the short foot of the column, and moves up and down with the slightest touch. The crest is rather peculiar. Near the base of the lip is a rather large erect fleshy callus, semi-circular in shape, slightly crenulate in front, and deep orange in colour. From this extend a pair of slightly diverging white erect keels each terminating in a free tooth tipped with orange. The extreme base of the lip is orange-yellow, but there **is not the slightest trace of spur or sac.**

The plant is somewhat anomalous in structure, and its affinities are rather obscure. The fact is, it is not very near to anything. The presence of a foot to the column excludes it from Cymbidieæ, and the absence of a spur or sac, from Eulophieæ. Thus it comes in Cyrtopodieæ, but is like nothing at present known, though in the crest it bears a certain resemblance to *Zygopetalum* and Aganisia. Further light may hereafter be thrown on this point. Individually, the flowers recall a small white form of Odontoglossum Pescatorei as much as anything else. This handsome species is dedicated to Elisabeth, Queen of Roumania, well-known in literary circles under her adopted name of "Carmen Sylva." The generic name serves to commemorate the pretty little crest, and at the same time to indicate a certain resemblance in habit to Eulophia.

Eulophiella, Rolfe in *Lindenia*, Engl. ed., III. p. 29.
E. Elisabethæ, L. Lind. and Rolfe, *l.c.*, t. 325.

R. A. R.

BRASSIA BIDENS.

By degrees, perhaps, we may be able to get this exceptionally difficult genus into something like order, as the materials come to hand. At all events the clearing up of the confusion in the history of any species is a step in the right direction, and we may therefore place the following facts on record. Brassia bidens was described by Lindley from the collection of Mr. R. Harrison, in 1837, the native country being unknown. It was said to be most allied to B. caudata. Afterwards Lindley added a quite distinct plant, Kegel, n. 694 (mis-spelt Regel), and gave the country as Brazil, though Kegel's plants are known to be from Guiana. And still more remarkable, he placed it in the group with a smooth lip; while his own dried type specimen is densely verrucose. In 1840, Sir William Hooker figured Brassia Lanceana var. viridiflora, from a specimen which flowered in the collection of C. S. Parker, Esq., of Annesley, near Liverpool, in September, 1839, and which had been obtained from Demarara. He remarks that some would consider it a new species, but experience had taught him that no set of plants were so liable to vary under cultivation as Orchids. This, too, is B. bidens. The species really belongs to the section with a verrucose lip, and is nearly allied to the Central American B. verrucosa. Other specimens have appeared from Guiana, which is certainly its native country. The flowers are green, the sepals and petals with large brown blotches, and the lip spotted with the same colour. As the species is in cultivation again it is advisable to clear up this little nest of blunders.

Brassia bidens, *Lindl. Bot. Reg.*, xxx. (1844, *Misc.*, p. 6; *Lindl. Fol. Orch.*, *Brassia*, p. 3 (in part .
B. Lanceana var. viridiflora, Hook. *Bot. Mag.*, lxvi. (1840), t. 3794.
Oncidium bidens, Rchb. f. in *Walp. Ann.*, vi. p. 769 (in part).

R. A. R.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 164.)

At this season of the year when the summer-flowering Phalænopses are generally in bloom, or pushing flower-spikes, in the Orchid houses in England, an account of the mode of growth of some of them in their native homes may be of special interest.

The growth of the summer-flowering species in the jungle is very luxuriant, and they grow together in great quantities, so that the collector, if he finds one plant, has no difficulty in getting plenty, as when once found they are abundant within a small area.

With one or two exceptions, most of them may be found in flower during the early rains in May, and they continue in bloom until the heavy rains set in, when active leaf growth commences, and all the strength of the plant goes to making up new leaves and filling the seed pods, as many of the plants seed freely in their wild state.

Although this particular section of Phalænopsis, known as Stauroglottis, is not so grand as the Euphalænopsis division, yet as seen in their native homes they are truly effective, from the great profusion in which their flower-spikes are produced. In our English Orchid houses they are easier of cultivation than the winter-flowering species, and are useful plants for the Phalænopsis house, coming into bloom when the others are past. Although growing in the summer in an atmosphere laden with moisture, and requiring a damp house to grow in, these plants do not like steam rising from water through which a pipe is passed. But plenty of water in the atmosphere may be given by damping the staging and floors, at the same time maintaining a free circulation of air; and the whole of the Stauroglottis section are good doers.

In giving a description of a few plants of this section, and the conditions under which they grow in their native homes, it must be borne in mind that a large portion of the enormous moisture these plants are surrounded by in nature is quickly absorbed by the air. It never stagnates, as in our Orchid houses at home, which is at the root of all our difficulties in growing these plants.

Phalænopsis tetraspis is a plant specially worth noting. We have not yet in England seen large plants of it, as, unfortunately, the large plants will not travel, and only the small ones reach England alive. But it is a truly beautiful plant in its native home. I myself saw in the South Andaman a plant which was many years old, the main plant bearing enormous leaves, quite three feet long. This plant had a progeny of children growing on the old flower-stems, and these plants again had

produced other flower-stems, which were also bearing plants. The whole plant was a mass of bloom, the original plant, the children, and the grandchildren, all blooming at one and the same time. There were certainly at least one hundred spikes in flower at the same time on practically a single plant. This plant was quite a sight, and as I did not gather it, I on several occasions took parties of officers up the creek to see it.

This plant grows on the boughs of the mangrove trees, and hangs down over the waters, which are tidal. When the tide retires and the mud is exposed, there is a considerable effluvia raised. The leaves of the plant are very soft, owing to the shaded position in which the plant grows, and such conditions would be very difficult to imitate in our English houses. I also found it growing on the rocks at the edge of the swampy ground. It apparently does not like salt air, like other Phalænopses, as it is never found near the sea, and only commences its growth up the tidal creeks, where the sweet water is strong enough to drive back the seawater.

Phalænopsis speciosa is a very free summer-flowering plant, and it grows under very different conditions to its ally, as it occurs on exposed trees, and within the influence of the salt breezes from the sea. It is found on the small islands of Katchal and Teressa, and several small islands near the Great Nicobar. I quite expected to find it on the large island itself, but failed to do so. Indeed, in the Great Nicobar I failed to find a single Phalænopsis or any other Orchid of consequence, the Order in this place being represented by plants with miserable flowers, only of interest to the botanist, but which I sent specimens of to Professor Reichenbach. I once measured a flower-spike of this Phalænopsis six feet in length. It is a plant that has grand branching spikes in its native home, and varies very much in the colour of the flowers. I have seen plants of it of the deepest purple, and others white with only a few purple streaks in the sepals.

(*To be continued.*)

THE HYBRIDIST.

MASDEVALLIA × RUSHTONII.

SOME considerable time ago Captain Hincks, of Terrace House, Richmond, Yorkshire, took in hand the hybridising of Masdevallias, and his experiments have been attended with great success. First came M. × Hincksiana, derived from M. tovarensis ♀ and M. ignea ♂, then M. × Stella, from M. Estradæ ♀ and M. Harryana ♂, and thirdly M. × Cassiope, from M. triangularis ♀ and M. Harryana ♂. And now two other very charming little hybrids have flowered in his collection, one being the subject of the present note. It was obtained by crossing Masdevallia ignea var. Eckhardii with the pollen

of M. racemosa var. Crossii, and is intermediate in shape, with the brilliant scarlet colour of the two parents. The scape is two-flowered. The perianth tube is 7 lines long, and the lateral sepals an inch long by 6½ lines broad, with very short tails. The dorsal sepal is triangular, 4 lines long, and the slender tail 7 lines long. The colour is brilliant scarlet with darker nerves. The petals are white with a little yellow on the lower margin, and the lip white, faintly suffused with violet at the base and yellow at the tip. This brilliant hybrid is dedicated to Mr. Rushton, Captain Hincks' able gardener.

Masdevallia × Veitchiano-Estradæ.

This is another brilliant hybrid, like the preceding, raised by Captain Hincks. Its parentage is indicated by its name, M. Estradæ being the seed parent. It is almost identical with M. caudata (Shuttleworthii) in shape and size, but the colour is a brilliant orange-buff, with minute iridescent violet hairs on the dorsal sepal. The perianth tube is 3½ lines long, the lateral sepals ovate, and the dorsal one elliptical-obovate, concave; each 9 lines long by 6 broad, with the tails 1¼ inches long. The petals are white, and the lip densely and minutely spotted with violet-purple on a white ground, and tipped with blackish-purple. Thus it will be seen to have the general shape of M. Estradæ, but considerably enlarged and very strongly suffused with the brilliant colour of M. Veitchiana, the pollen parent, whose iridescent hairs are also present, though much reduced in size. It is a very charming little plant.

Dendrobium × Roeblingianum.

This is a distinct and beautiful hybrid which has been raised by Messrs. Pitcher and Manda, of the United States Nurseries, Short Hills, New Jersey, U.S.A., from D. Ruckeri crossed with the pollen of D. nobile, and dedicated to C. G. Roebling, Esq., of Trenton, in the same state, an ardent amateur of Orchids. The stems are long and thin, the leaves lanceolate, and the flowers produced in pairs on the ripened bulb. The flowers are medium-sized and well proportioned. The sepals and petals are slightly incurved and undulated; the colour French white slightly shaded with purple. The lip is large, rounded, reflexed, and undulated; the colour French white with the interior beautifully striped with bright purple on a white ground, while similar lines extend through a yellow blotch on the disc, which lightens up the surrounding colours. It is a very interesting hybrid.

Cypripedium × Madame Gibez.

This is a hybrid between C. venustum and C. villosum, and thus would appear to be a variety of C. × Measuresianum, but it is said to be superior to anything else derived from the same cross. The flower is said to be large,

and of an uniform golden yellow, inclining to brown towards the centre of the segments.—*Orchidophile*, March, p. 67.

Dendrobium × cheltenhamense.

A hybrid raised by Mr. J. Cypher, of Cheltenham, between D. luteolum and D. aureum, said to have flowers exactly intermediate between the two, and to be a great improvement upon D. luteolum in size and colour.—Gower in *The Garden*, May 13th, p. 389.

Disa × kewensis.

This is a very elegant hybrid, raised at Kew, it is said from D. grandiflora crossed with the pollen of D. tripetaloides. It bears a considerable resemblance to D. × Veitchii, but the flowers are smaller, and the rose-pink dorsal sepal is spotted with red, indicating the influence of the pollen parent. The lateral sepals are also rose-pink, and the petals yellow with transverse maroon-crimson spots. The seed was sown in November, 1891, and one of the plants flowered last May, when only eighteen months old. There are many other seedlings from this and other crosses made at the same time, but only one has at present flowered.—Watson in *Gardeners' Chronicle*, May 27th, p. 625.

Cypripedium × corbeillense.

This is described as a floriferous and beautiful hybrid derived from Cypripedium Bullenianum and C. insigne, in the collection of M. Paul Darblay. It is not stated which was the seed parent. The cross was effected in December, 1886, and the seed sown eleven months later. It flowered in October, 1892, when nearly five years old, presenting the usual combination of characters derived from the two parents. It appears to be the first hybrid derived from C. Bullenianum.—C. Maron in *Revue Hort.*, June 1st, p. 250.

Cypripedium × Sylvia.

A hybrid, raised in the collection of C. Winn, Esq., The Uplands, Selly Hill, Birmingham, from Cypripedium Curtisii and C. Lawrenceanum, the latter presumably the pollen parent. The foliage is said to be like that of some forms of C. Lawrenceanum, and the flower just intermediate between those of the two parents, the dorsal sepal closely lined, and the petals thickly spotted. The reverse cross is said to be known as C. × Goweriana-num.—O'Brien in *Gardeners' Chronicle*, June 10th, p. 682.

Lælia × Oweniana.

A hybrid, raised by Messrs. F. Sander and Co., of St. Albans, from Lælia pumila Dayana ♀ and L. xanthina ♂, which received an Award of

Merit from the Royal Horticultural Society on August 9th, 1892, and now flowering for the second time. The sepals and petals are white changing to cream-colour, and the lip purplish-crimson, with a lilac blotch at the tip and a chrome-yellow base. It is a very pretty and floriferous little plant.—O'Brien in *Gardeners' Chronicle*, June 10th, p. 682.

Lælio-cattleya × Maynardii.

A brightly coloured and very attractive little hybrid raised by Mr. Maynard in the establishment of Messrs. F. Sander and Co., St. Albans, between Lælia pumila Dayana ♀ and Cattleya dolosa ♂. It was awarded a Silver-gilt Flora Medal by the Royal Horticultural Society, on June 6th last, for the best hybrid Orchid not exhibited previous to January 1st of the present year. It is quite intermediate in character. The first and third pseudo-bulbs are one-leaved, as in the mother plant, and the second and fourth two-leaved, as in the pollen parent. It has also the dwarf habit of the former, but the flower is much larger and the lip more expanded and not enfolding the column, as in the Cattleya. The sepals and petals are rosy lilac, and the lip dark purple-crimson in front, but paler behind, and nearly white along the disc. The column is white and the anther cap purple. It is a neat and elegant little plant.—*Gardeners' Chronicle*, June 17th, p. 715, fig. 108.

OBITUARY.

We regret to hear of the death, after a long illness, of John C. Bowring, Esq., of Forest Farm, Windsor Forest, which took place on June 20th, at the age of 72 years. Mr. Bowring was well known as a cultivator of Orchids, and one who specially turned his attention to their hybridisation. As long ago as 1876 his first hybrid, Selenipedium × stenophyllum, flowered, and this was followed by S. × conchiferum, Cypripedium × gemmiferum, and Anguloa × media, the first hybrid in the genus, in 1881, and Cypripedium × amandum in 1884. C. × concinnum, C. × regale, and C. × Sallieri Hyeanum were also raised by him. Our own columns furnish evidence of his work, in Cypripedium × Leda (p. 114) and C. × Paulii (p. 147), and a letter from him shows that his interest in the work was maintained up to the last. Cypripedium purpuratum seems to have been a favourite with him, as it was one parent of C. × gemmiferum, C. × concinnum, and C. × regale, and the only two-flowered scape of it which we have seen was from his collection. This he considered very exceptional, for he remarked that among the hundreds he had seen in its native home in Hong Kong he had never seen such an example. Mr. Bowring was the eldest son of the late Sir John Bowring, formerly H.M.'s Plenipotentiary in China.

THE PHENOMENAL SEASON.

We have received the following interesting letter from an esteemed correspondent :—

Bridge Hall, Bury, Lancashire.
June 18th, 1893.

To the Editor of the Orchid Review.

Dear Sir,—Thinking it may be of interest to some of your readers, I jot down the various temperatures (time 2 p.m.) in all my Orchid houses—viz. :—

East Indian—south aspect—90° Fahr.
Cattleya—south aspect—85° Fahr.
Oncidium—south aspect—81° Fahr.
Cypripedium—east aspect—84° Fahr.
Odontoglossum—east and west aspect (spans)—85°, 85°, 80°, 85°, 80° Fahr.
Out of doors—north aspect—89° Fahr.

All these temperatures have been registered, in spite of double blinds on cool houses and Cypripedium house, and partial double blinds on all the others.

Air has been admitted to the fullest possible extent by opening doors and all ventilators, bottom and top; the atmospheres have been kept moist by continually damping the floors, and all cool, as well as some of the other Orchids (not including Cattleyas) have been syringed twice during the morning.

Up to now, in spite of our tropical weather, my Orchids have never looked healthier, or grown so well.

Yours truly,
O. O. WRIGLEY.

[Other correspondents have also spoken of the excellent growths made by their Orchids during this exceptional season. It is very certain that these plants succeed better with sun-heat than when the temperatures have to be kept up by continued stoking. The increased light has also been beneficial to many Orchids, and an excess of sunshine during the hotter portion of the day can always be prevented by judicious shading. In the present instance it will be observed that by this means, good ventilation, and by continual damping down, the temperature in the houses was considerably lower than that outside. We hope other correspondents will favour us with similar interesting communications, on this and other matters.—Ed.]

ODONTOGLOSSUM GALEOTTIANUM.

This very rare Odontoglossum has appeared on several occasions among importations of O. Cervantesii, which is rather curious, seeing that it is evidently a good species and not a hybrid. It is nearly allied to O. nebulosum, but the flowers are pure white, with a very few brown spots near the base of the petals, and a long white callus to the lip covered with yellow streaks. It has been suggested to be a natural hybrid between the two species just named. both by Reichenbach and others, but this is clearly incorrect, for the column has invariably a pair of long subulate-linear teeth not met with in any other. A plant of it has now flowered in the collection of C. Young, Esq., Royston Gardens, Richmond. It is a very pretty little plant, and apparently very rare in a wild state. Galeotti, the original discoverer, found it near Oaxaca, growing on oaks at 7–8,000 feet elevation.

Odontoglossum Galeottianum, A. Rich. in *Ann. Sc. Nat.*, ser. 3. iii. p. 27 ; *Lindl. Fol. Orch.*, *Odont.*, p. 9 ; Rchb. f. in *Gard. Chron.*, 1870, p. 39 ; id., 1874. i., p. 97 ; Rolfe, *l.c.*, 1890, ii., p. 11.

CALENDAR OF OPERATIONS FOR JULY.

By W. H. White, Burford, Dorking.

Owing to the immense quantity of Orchids now annually imported, greater facilities for obtaining these plants than in former years has induced many new growers to commence their cultivation, and to such a few hints on their management may prove acceptable. Notwithstanding the severe ordeal which the plants have to pass through from the time they are collected until they arrive in this country, they are, generally speaking, easy to establish ; a fact which is due to the care taken by the collectors to gather them in the proper season, and to careful packing, besides which, owing to the greatly improved steamship service, the transit from their native habitats is decidedly quicker than in olden times. One thing may be justly said in favour of imported plants, that, although they have been considerably weakened by losing a number of leaves and roots, they are of healthy constitution ; also they create great expectations from the buyers as regards variety.

To be successful in establishing imported Orchids, much depends upon good judgment and discretion on the part of the cultivator. First cut away all dead roots, &c., and carefully sponge all bulbs and leaves, so as to thoroughly cleanse them from dirt and insects. Instead of immediately placing the plants into their growing quarters, it is advisable to keep them for a few days in a cooler and drier atmosphere, as if the plants be subjected

to a temperature that excites them before proper reaction sets in, the consequences are that they lose their foliage before the young roots appear.

With regard to plants which have no pseudobulbs, such as Aërides, Saccolabiums, Vandas, Angræcums, and Phalænopses, these should be suspended head downwards, and slightly syringed two or three times a day, until their leaves have absorbed enough moisture to plump them, and the stems commence to send forth their succulent roots. After which they may be potted into as small pots or baskets as possible, and gradually inured into houses where plants of the same species are growing well. Until the pots become full of roots the plants should be protected from bright sunshine independently of the other inmates. A thin piece of tiffany or a sheet of tissue paper will answer this purpose.

Newly imported plants of those already mentioned frequently send out flower spikes, which should be pinched off, and the plants not allowed to bloom until they are thoroughly well established, as nothing tends so much to weaken and throw them into a state of bad health as early flowering.

Cypripediums, Cattleyas, and Lælias of the elegans type may be potted immediately on being placed into the hands of the cultivator, using pots just large enough to allow room for one season's growth. See that the plants are securely fixed by tying the bulbs to neat sticks, as the compost used is not enough to steady them. This is very important, because if the plants are allowed to sway about every time they are moved they will never become properly rooted.

Lælias of the anceps type require nothing in the way of potting material at first, but should be placed in pots filled with broken pieces of crock. No water should be allowed to touch the bulbs or rhizomes, or they may rot. In order to induce the plants to send out fresh roots, keep the atmosphere surrounding them moist, and pour water two or three times a week through the crocks. Immediately the young roots show signs of pushing the plants should at once be potted.

Odontoglossums and Masdevallias may also be potted up when received, using a thin layer of peat and moss on the surface, packed tight enough to steady each plant. After the first growth is formed they should then at once be transferred to larger pots.

In watering newly imported plants great care must be taken not to over dose them at first, but as root action increases, and the young bulbs increase in vigour, more plentiful and frequent waterings will be required. In treating on imported plants, it is impossible to mention the whole of the great Orchid genera, and though in some respects similar treatment is required, much must be left to the intelligence and judgment of the grower who has charge of the collection. The great point to be aimed is to bring the plants back to their normal condition by slow degrees after their enforced rest.

Amongst the most important Orchids recently introduced may be mentioned the beautiful Dendrobium Phalænopsis. It is decidedly a grand acquisition to the Dendrobium family, and no collection can be said to be complete without one or more plants. After repeated trials, it has been found to be of easy culture, and very floriferous. When shown at one of the Royal Horticultural Society's meetings last year it was a sight not easily forgotten, as the variation in the colour of the flowers from almost white to the richest crimson-purple, and the whole grouped together, it was a perfect picture of loveliness. The newly imported plants should be at once potted into clean pots, as previously advised for Dendrobiums on page 121.

Two handsome plants now in bloom are Grammangis Ellisii and Grammatophyllum Fenzlianum var. Measuresianum. The former is still rare in collections, owing probably to the difficulty of getting the plants home alive. The latter is more easily obtainable, having a robust constitution, which enables it to better withstand the long journey home. Both Orchids require the East Indian temperature to grow in, and should have every encouragement given them as regards heat, light, and moisture, especially when in full growth. Basket culture is most suitable, with but very little material to grow in, as the roots prefer being in the air rather than remaining in the compost.

A rare and pretty little Orchid, not often seen in bloom, is the scarlet Hexisia bidentata, which may well be compared to Lælia cinnabarina as regards colour, but the individual flowers are much smaller. These are produced in threes on upright growths about six inches in length. When seen, as here, with three dozen flowers open, it makes a charming little specimen. It proves itself to be a plant of easy culture, flowers freely, and lasts a long time in perfection. It should be grown in the Cattleya house, hanging up close to the roof glass, in small well-drained shallow pans. The ordinary peat and moss will suit its requirements admirably.

In the East Indian house will be found some plants that have done flowering, as Cypripedium Stonei, C. Rothschildianum, C. Lawrenceanum, C. Curtisii, C. Sanderianum, C. × Swanianum, C. barbatum, &c. These commence to grow very soon after the flowering period is over, so that if any require more pot room or fresh compost the matter should be attended to without delay.

The dwarf growing Cypripedium niveum, C. concolor, C. bellatulum and C. Godefroyæ are amongst the general favourites, especially to hybridists, who have succeeded in raising several beautiful hybrids from them. Many growers find this section more difficult to manage than the majority of Cypripediums. All of them luxuriate in a hot, moist atmosphere, choosing the lightest position in the East Indian house, where they may be but thinly shaded at all times. The pan or pots used must be well drained, placing over the crocks a thin layer of moss, to secure the drainage. It is not

necessary to elevate the plants above the rim of the pot, as if kept about level with it they will do equally well. Allow plenty of root room, and fill up firmly with the following compost:—good fibrous turfy loam, intermixed with lumps of chalk or limestone about the size of a pigeon's egg, and a small quantity of sphagnum moss. Where chalk is not easily procurable, thick pieces of broken crocks may be substituted, though it should be remembered that these plants grow naturally on limestone rocks, and it is probable that it contains something essential to their welfare.

All the above species require a plentiful supply of water at all times, and especially during the growing season. Instead of watering them in the usual way with the can, we always stand them in a pail of water, just covering the rim of the pot, and allowing them to remain for several minutes to ensure a thorough soaking. Thrips are very fond of the young foliage of these plants, and must be sought after frequently. In sponging the leaves great care must be taken not to raise them more than is really necessary, or they will certainly crack, greatly to the disfigurement of the plants.

The hot, almost tropical, sunshine during the present season has been all that could be desired for the successful blooming of the grand Cattleya gigas, and its free-flowering variety Sanderiana. About a week or ten days after it has passed out of flower is the best time to re-pot, or to give fresh material to those that require it, as at this time the newly-made growth will be fast pushing a number of fresh roots from their base—in fact, C. gigas makes more roots immediately after the flowering period than at any other time of the year. After re-potting, the plants should be stood at the coolest end of the Cattleya, or intermediate house, where they may obtain sufficient light and air to thoroughly harden and consolidate their newly-made bulbs. Only sufficient water must be given to prevent the roots from perishing, or any undue shrivelling.

In Cattleya Dowiana aurea we have an Orchid of unquestionable beauty, and it continues to hold a prominent position in the most select collections. At this time the strongest plants will be in bloom, and every care should be taken not to allow water from the syringe, or from any other source, to settle upon the flowers, or they will be likely to decay. A fortnight hence will be soon enough to give this plant more root-room or fresh material.

Among others that require re-potting will be found the following:—C. Mendeli and C. Mossiæ, and their many splendid varieties; also C. Warneri, Lælia purpurata, and the new L. tenebrosa.

An extremely chaste and beautiful Orchid now in flower is Phaius Humblotii. Considerable difficulty has been experienced in successfully cultivating this gem for long together. Probably our greatest mistake has been in giving it a higher temperature than necessary, and too close an atmosphere. After repeated trials, it has been found to succeed best in a shady position in the Cattleya house, and potted in the same way as an

ordinary stove plant, the material used for the roots to run into being of a very open nature. Fibrous loam, leaf-soil, and sphagnum moss, in equal parts, should be used, with a large proportion of small broken pieces of crocks; mixing the whole well together. The plants should at no season be allowed to become thoroughly dry, but less water will be required when at rest than in the growing period. The greatest enemies of this plant are small yellow thrips. These insects, being so minute, are not easily discernible to the naked eye, and much damage is frequently done to the plant before the grower is aware of their presence. Sponge or brush is no match against these troublesome pests when once they enter the hearts of the young growths. Therefore, immediately the new growths make their appearance, the safest remedy is to commence and continue dipping the plants into some weak insecticide until growth is completed.

Dendrobium infundibulum, and its variety Jamesianum, are not often found in a flourishing condition. These two have often been grown in too much heat. The Odontoglossum or cool house is the proper place for them during the hot summer weather. About the end of September, when the nights become cold, they should be placed at the cool end of the intermediate house, to complete and ripen their growth; and at all times they must be kept moist at the root, especially during the growing season.

As the Thunias pass out of flower, they should be moved to the resting-house to consolidate and ripen their growths; but water should not be entirely withheld until the leaves have turned yellow and fallen off. They still require to be kept free from insects. Lay the plants down on their sides occasionally, and syringe them with soft-soapy water.

With such exceptionally hot weather as we are now having, both by day and night, very little fire-heat will be required, except in the warmest divisions. The pipes should be kept only just lukewarm during the night. Ventilation may be freely given at all hours in the Odontoglossum and Masdevallia houses. Partially close the ventilators in the East Indian, Cattleya, and Mexican divisions early enough in the afternoon to raise the temperature 8° or 10° by sun-heat, but open them again when finishing up for the night. Maintain in each division a moist, growing atmosphere, and on no account neglect the shading and watering.

ORCHID PORTRAITS.

BULLETINO DELLA R. SOCIETA TOSCANO DI ORTICULTURA.

CYPRIPEDIUM SPICERIANUM, Rchb. f. VAR. MERCATELLIANUM, Pucci. A peculiar variety from which the green colour has vanished, leaving the flower yellowish-white marked with purple, instead of purple-brown. It appeared with Signor R. Mercatelli, of Florence.—May, p. 144, t. 5.

GARDEN AND FOREST.

CYPRIPEDIUM ROTHSCHILDIANUM, Rchb. f.—March 29th, pp. 144, 145, fig. 25.

GARDENERS' CHRONICLE.

CYCNOCHES PENTADACTYLON, Lindl. Three illustrations, showing the plant, and a male and female flower separately. The former is a reproduction of the same photograph as the one we gave in our March issue (p. 81, fig. 4), and is said to show an occasional female flower towards the base of the racemes, which, however, is not the case.—May 20th, pp. 597, 599, figs. 87 to 89.

LÆLIO-CATTLEYA × MAYNARDII (see p. 213).—June 17th, p. 715, fig. 108.

GARDENING WORLD.

MAXILLARIA SANDERIANA, Rchb. f.—April 29th, pp. 548, 549, with fig.

ILLUSTRATION HORTICOLE.

EULOPHIELLA ELISABETHÆ, L. Lind. and Rolfe (see p. 207).—May 15th, p. 39, t. 173, fig. 2. A note stating "Cette . . . est originiare du Congo" is evidently a mistake.

JOURNAL OF HORTICULTURE.

PHAIUS MACULATUS, Lindl.—May 18th, p. 397, fig. 72.

MAXILLARIA SANDERIANA, Rchb. f. VAR. XANTHOGLOSSA. A fine variety, with yellow lip, from Messrs. F. Sander and Co.—June 22nd, pp. 494, 495, fig. 89.

LINDENIA.

CATTLEYA × HARDYANA, Rchb. f. VAR. STATTERIANA, Rolfe. A very handsome variety, with white sepals and petals, and the blotches on the sides of the lip unusually large and pale. It appeared in the collection of T. Statter, Esq., Stand Hall, Whitefield, Manchester.—t. 373.

LÆLIA × OWENIÆ, L. Lind. A richly coloured form, having the flowers deep purple with the exception of the throat and side lobes of the lip, which are white. It is supposed to be a natural hybrid, of which Lælia Perrinii is probably one parent.—t. 374.

CATTLEYA AMETHYSTOGLOSSA, Lind. and Rchb. f., VAR. ROSEA, Rolfe. A variety with somewhat smaller flowers and a rose-coloured ground, which has appeared in several collections.—t. 375.

CATTLEYA MOSSIÆ, Hook. VAR. MENDELI, L. Lind. A light-coloured variety which appears to derive its name from a certain resemblance to C. Mendeli in the flowers. It is mentioned as not impossibly a natural hybrid between the two, but we must dissent, as their habitats are far too remote. —t. 376.

ORCHID ALBUM.

CATTLEYA MOSSIÆ, Hook. VAR. REINECKIANA, Rchb. f. From the collection of A. H. Smee, Esq., The Grange, Carshalton.—t. 401.

DISA TRIPETALOIDES, N. E. Br.—t. 462.

MAXILLARIA SANDERIANA, Rchb. f.—t. 463.

CALANTHE VESTITA, VAR. OWENIANA, Williams. A very pretty hybrid between C. vestita and C. × Veitchii, and therefore not a variety of C. vestita in the true sense. Flowers rose and white with light yellow eye. Raised by Messrs. B. S. Williams, and dedicated to G. D. Owen, Esq., of Rotherham.—t. 464.

REVUE HORTICOLE.

CYPRIPEDIUM CHAMBERLAINIANUM.—June 1st, p. 141, with plate.

WIENER ILLUSTRIRTE GARTEN-ZEITUNG.

EPIDENDRUM UMLAUFTII, *Zahlbruckner*. Described as new and the habitat unknown, but it appears to be identical with E. costaricense, Rchb. f. (*Bot. Zeit.*, x., p. 937).—June, p. 210, t. 2.

CONTINENTAL NOTES.

By CH. DE BOSSCHERE.

AT the last meeting of the Chambre Syndicale des horticulteurs belges, at Ghent, some interesting Orchids were observed, and among them the following:—A very fine dark form of Cypripedium Lawrenceanum, from M. Em. De Cock. Aërides crassifolium, from MM. Vervaet et Cie., with large and brilliantly-coloured flowers. Odontoglossum crispum guttatum, from the same firm, remarkable for its perfect form and regular markings. Mormodes luxatum eburneum, a splendid plant bearing a raceme of twenty-one ivory-white flowers with a large dark purple blotch on the lip, from M. A. Van Imschoot, of Ghent. Gongora odoratissima, with three very fine racemes of its curiously-shaped amaranth-coloured flowers, from the same exhibitor. M. Van Imschoot also exhibited the rare Brassia keiliana, with ten racemes; Trichopilia crispa marginata, a superior variety, a splendid and well-flowered example of Eriopsis rutidobulbon, always so rare in Belgian collections; Brassia caudata; and a beautiful example of Miltonia vexillaria, with twelve racemes. M. Jules Hye exhibited a beautiful hybrid Odontoglossum, much like O. × excellens.

The meetings of the Orchidéene, of Brussels, have been suspended during June, July, and August.

In the establishment of MM. Vervaet et Cie., of Mont-St.-Amand, is a very beautiful example of Miltonia Phalænopsis, and in the celebrated collection of M. A. Van Imschoot a remarkable Cattleya Schilleriana.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THE display of Orchids at the Drill Hall, James Street, Victoria Street, Westminster, on June 6th, was not on such an extensive scale as usual. This, however, is only what might have been expected after such a magnificent show less than a fortnight previously at the Inner Temple Gardens, when Orchid growers put forth their strength to do honour to the occasion, and who will say that they did not succeed?

It is such a general occurrence for a Certificate of some sort to be recommended by the Committee that it is a matter of surprise to find that not a single one was granted on June 6th—an event hitherto unknown, I believe, since the formation of the Orchid Committee as a distinct body in March, 1889. A few Medals however were carried off.

A. H. Smee, Esq., F.R.H.S., The Grange, Wallington (gr. Mr. C. W. Cummins), taking a Silver Banksian Medal for a collection of fine varieties of Cattleya Mossiæ flowers, in addition to which he exhibited a green and unspotted form of Lycaste Deppei.

Messrs. Lewis and Co., Chase Side, Southgate, N., obtained a similar medal for a group of Cattleyas, Lælias, Thunia Marshalliana, Oncidiums, &c.

A Silver Flora Medal was the award to Messrs. Low and Co., of Clapton, for a charming group, in which Cypripedium bellatulum, C. Volonteanum, C. superbiens, Disa grandiflora, &c., were predominant.

The prize of a Silver-gilt Flora Medal for the best new seedling Orchid not exhibited prior to 1893, was won by Messrs. F. Sander and Co., St. Albans, who entered the purple-flowered hybrid Lælio-cattleya × Maynardii (L. pumila Dayana ♀ × C. dolosa ♂), which received an Award of Merit on February 14th last.

Among the miscellaneous exhibits was a pretty hybrid Masdevallia × Veitchiano-Estradæ with orange coloured flowers, from Captain Hincks, Richmond, Yorks.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, near Manchester (gr. Mr. R. Johnson), sent two fine varieties (delicata and Stand Hall) of Cattleya Warscewiczii, also Lælia purpurata gigantea, L. tenebrosa, Cypripedium superbiens, &c.

H. Rowland, Esq., York Street, Manchester, sent a splendid spike of a deeply coloured Cattleya Warscewiczii with seven large flowers, which unfortunately arrived too late for the Committee.

Besides Lælio-cattleya × Maynardii, Messrs. Sander and Co. exhibited Lælia × Oweniana, Cypripedium × macrochilum, Zygopetalum (Batemannia) Burtii, Dendrobium hercoglossum, &c.

The meeting on June 20th was more prolific of good things, and quite up to the usual standard of excellence in every way.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. White), was the recipient of no less than four Botanical Certificates, for such interesting plants as Luisia volucris and L. Amesiana—both reminding one of Aërides Vandarum or Vanda teres by their quill-like leaves and habit—Hexisia bidentata with scarlet flowers, and Lælia crispilabia var., having a bright yellow lip and purple-pink sepals and petals; Coelogyne sulphurea with rather small semi-pellucid flowers and a sulphur-yellow crest on the lip; Masdevallia demissa, with purple flowers, and Phaius Humblotii with two spikes, were also noticeable.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. W. Murray), sent a spike of Selenipedium caudatum Wallisii with four large flowers, and a bloom of a hybrid Cypripedium called C. × "Vexill-Io," which is somewhat like C. × vexillarium in shape, but not an improvement on it in colour.

F. W. Moore, Esq., F.R.H.S., Botanic Gardens, Glasnevin, Dublin, exhibited a strong truss of Aërides virens, with crimson blotched and speckled flowers.

G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester, sent flowers of Lælio-cattleya × Arnoldiana.

From Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), came a strong plant of a Cattleya with flowers having the general features of C. Warscewiczii, but somewhat different, owing to the tubular lip with deep crimson side lobes, and a white expanded front lobe mottled with purple near the margin. Twin flowers of the beautiful Cypripedium × Aylingii, and a spike of Odontoglossum × Wilckeanum superbum came from the same collection.

M. Wells, Esq., Broomfield, Sale, Manchester, exhibited flowers of Cypripedium superbiens, the pretty Cattleya Mendeli delicata, Lælio-cattleya × Phœbe, and L. C. × Arnoldiana.

Chas. Winn, Esq., The Uplands, Selly Hill, Birmingham, exhibited a plant of a pretty Cypripedium under the name of C. "Psyche," which from all outward appearances is a white-lipped form of C. Godefroyæ—probably C. G. leucochilum, only purer.

Messrs. Backhouse and Son, of York, exhibited four strong plants in a pan of Disa × Veitchii, which bore in the aggregate of twelve expanded flowers of a beautiful deep rose colour.

Messrs. Charlesworth, Shuttleworth, and Co., Heaton, Bradford, exhibited a strong Grammangis Ellisii, bearing seventeen greenish-yellow and speckled brown flowers. A Botanical Certificate was awarded to Odontoglossum peruviense, which has flowers of the O. mirandum type, being of a deep brown with greenish-yellow tips.

A Bronze Banksian Medal went to Messrs. Lewis and Co., Chase Side, Southgate, for a group of Cattleyas, Lycastes, Oncidium pulvinatum, Chysis aurea, &c.

Messrs. H. Low and Co., Clapton, exhibited in attractive style a pretty group, which received recognition in the shape of a Silver Banksian Medal. The following may be mentioned as noticeable:—A fine Cattleya Warscewiczii Sanderiana, Lælia purpurata, several fine Cypripedium bellatulum, Aërides Fieldingii, Masdevallia Harryana, Disa grandiflora, and a pretty little Sarcanthus Lowii, with distichous leaves and white flowers dotted with pink.

Messrs. F. Sander and Co., St. Albans, exhibited several varieties of Cattleya Warscewiczii, the most noticeable being C. W. Sanderæ—rendered distinct by a pale mauve margin to the lip—which received an Award of Merit. A Botanical Certificate went to a peculiarly distinct Epidendrum Forgetianum, with pale yellow flowers conspicuously veined with purple-brown. Zygopetalum (Pescatorea) Klabochorum, with white crimson-tipped flowers, and Platyclinis filiformis, with about one hundred and fifty drooping spikes of lemon-yellow flowers, were also noteworthy—the latter receiving a Cultural Commendation.

Messrs. B. S. Williams and Co., Upper Holloway, contributed a large group, which was staged with care and effect, and gained a Silver Flora Medal. The most conspicuous plants were Cypripedium × superciliare, C. superbiens, C. Curtisii, Selenipedium × grande, Dendrobium Dearei, Oncidium macranthum, and Epidendrum vitellinum majus.

The next meeting of the Orchid Committee will be at Chiswick Gardens, on July 11th, at eleven a.m., instead of twelve, when a special flower show will be held. Lady George Hamilton has consented to distribute prizes in the afternoon, and the Band of Her Majesty's Royal Horse Guards (Blue) will perform during the day, while refreshments will be supplied by Messrs. Spiers and Pond.

REPLIES TO CORRESPONDENTS.

(An addressed Post Card will ensure a reply by post.)

H. J. R., Florence.—Cattleya Mossiæ, a light-coloured variety. The Cattleya Kimballiana is not quite identical with the original drawing, yet being purchased under the name should be correct. But what you send is certainly a variety of C. Mendeli. A natural hybrid between C. Trianæ and C. Eldorado is, of course, impossible. Cypripedium barbatum, a deformity not uncommon. Dendrobium D'Albertisii, not found. Two others next month.

O. O. W., Bury.—Many thanks.

J. F. M., N.J.—Many thanks. Please send a dried flower at first opportunity.

F. W. M., Glasnevin.—Many thanks; next month.

T C. H., Richmond.—Selenipedium × Ainsworthii, light var.; next month.

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DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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THE ORCHID REVIEW.

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NOTES.

THE duties of the Orchid Committee at the meeting of the Royal Horticultural Society held at Chiswick on August 8th were lighter than usual, nevertheless several very interesting things were exhibited; notably, Cypripedium × Massaianum, the first hybrid from C. Rothschildianum, which received an Award of Merit; C. Stonei Cannaertianum, which received a similar award; and a three-flowered spike of Cattleya Rex.

The last named is evidently a summer-flowering species of great beauty. It was stated that the spike shown was one of two borne by the same plant, which, although showing improvement each year, has never made a root in this country. This surely is an anomalous character. A single flower has also expanded on a plant in the Kew collection.

Two meetings of the Royal Horticultural Society will be held during August, on the 8th and 29th respectively, when the Orchid Committee will meet on each occasion. The former meeting will be held at the Drill Hall, Westminster, at 12, noon, and the latter at the Royal Agricultural Hall, Islington, an hour earlier.

A plant of the remarkable and beautiful Coryanthes leucocorys has recently produced a flower in the collection of F. Wigan, Esq., Clare Lawn, East Sheen, under the care of Mr. W. H. Young. The flower is very large, and the ivory-white helmet forms a charming contrast with the rose-coloured bucket-like lip. As regards shape, no more remarkable flower exists in the whole family.

A portrait of M. Alfred Van Imschoot, the well-known Belgian Orchidist, whose collection contains so many botanical rarities in addition to showy things, appears in the *Journal des Orchidées* for July 15th, p. 142.

The list of Garden Orchids is continued in the *Gardeners' Chronicle* for June 10th, by Mr. Rolfe, and reaches Lissochilus, of which eleven species are enumerated, including the remarkable and handsome Lissochilus **giganteus.**

A singular example of how synonyms are made appears in the *Gardeners' Chronicle* for July 7th. One of the sights of the Victoria-house at Kew is said to be a monster plant of Grammatophyllum Sanderianum, imported by Messrs. F. Sander and Co., of St. Albans, and presented to the Royal Gardens. A woodcut of the plant is given. We happen to have seen the plant in question, which bears a large label—"Grammatophyllum **speciosum.**"

A hybrid Vanda has appeared, the first in the genus, we believe. It is a cross effected by a lady resident in Singapore, between Vanda Hookeriana and V. teres, two species said to be cultivated in almost every garden in that island. It is said to be a very beautiful plant. A note appears in another column. Unfortunately, no record was kept as to which was the seed parent.

The celebrated Quorndon House variety of Cattleya Mendeli has, we learn, passed into the collection of G. Hardy, Esq., of Pickering Lodge, Timperley, Cheshire, having been acquired at the Quorndon House sale for 220 guineas.

Collectors of choice varieties of Orchids beware! The aniline dye fiend is abroad, as we have ocular demonstration. A correspondent sends us a dried flower of Odontoglossum crispum which he has received, with the offer of half the plant for the modest sum of one hundred and fifty guineas. Our opinion was asked, and given, and we are extremely sorry not to be able to give the enterprising manipulator's name to our readers.

"I had a suspicion it was a swindle," writes our correspondent, in reply. "I had never seen such a curious colour before in any Odontoglossum." And never would again, we may add, if he had purchased the plant and expected to see the colour at the next time of flowering.

The *modus operandi* is very simple. A flower is cut and the pedicel placed in a strong solution of aniline dye. The colour is gradually absorbed and passes along the vascular bundles, in some parts becoming diffused into the tissues. A very pretty sham is the result, which may be afterwards dried, as in the present instance, and used with fraudulent intent. Fortunately the trick is a very transparent one. Nevertheless people should be on their guard, or they may be imposed upon.

THE HISTORY OF ORCHID HYBRIDISATION.

PART VII.

(*Continued from page* 197.)

IN 1888 the genus Epidendrum was added to the list of those in which hybrids had been artificially obtained. Epidendrum × O'Brienianum was raised by Mr. Seden in Messrs. Veitch's establishment, by crossing E. evectum with the pollen of E. radicans. In colour it is quite intermediate, though in the shape of the flower the influence of the seed parent somewhat preponderates. It is very handsome and floriferous.

The ranks of the hybridists were now being rapidly swelled, and during 1888 the work of several new operators was placed on record for the first time, which we may first consider.

Lælia × Tresederiana was raised by Mr. J. S. Treseder, in the establishment of Messrs. Heath and Sons, of Cheltenham, from Lælia crispa and Cattleya Loddigesii. It is not stated which was the seed parent. It was described as a lovely novelty. The seed was sown in January, 1881.

Cypripedium × Peetersianum was raised by Mr. A. A. Peeters, of St. Gilles, Brussels, from C. philippinense ♀ and C. barbatum ♂. Thus it is the reversed cross of C. × selligerum, from which it is not appreciably different.

Cypripedium × Lathamianum was raised by Mr. W. B. Latham, Curator of the Botanic Gardens, Birmingham, from C. Spicerianum crossed with the pollen of C. villosum, whose characters are both well represented in it. It is a fine and striking hybrid.

Cypripedium × hephæstus appeared in the collection of R. H. Measures, Esq., of The Woodlands, Streatham, as a waif of unknown origin, but it was supposed that C. Lawrenceanum and C. barbatum were the parents.

Four other hybrids also appeared in this collection during 1888, which we may now proceed to note, taking them in the order in which they were described.

Cypripedium × conspicuum was described as a plant of doubtful origin, though from its characters it may have been derived from the same parentage as C. × Harrisianum.

Dendrobium × murrhiniacum was obtained by crossing D. nobile with the pollen of D. Wardianum. It is a handsome hybrid, with flowers most resembling those of the pollen parent.

Cypripedium × polystigmaticum was raised from C. venustum and C. Spicerianum, the former believed to have been the seed parent. It is quite intermediate in character.

Cypripedium × variopictum was the last of the group, and was derived from C. Lawrenceanum and C. Spicerianum, the former being the seed parent. Thus it has the same parentage as C. × radiosum, raised by Messrs. Veitch, though somewhat differing in colour.

Cypripedium × Vervaetianum was raised by Messrs. Vervaet and Co., of Mont-St.-Amand, Ghent, from C. Lawrenceanum and C. superbiens, the latter believed to have been the pollen parent. The foliage closely resembles that of the former species.

Cypripedium × Lemoinierianum was raised by M. Lemoinier, of Lille, and obtained the first prize for a new seedling Orchid at the Ghent Internationale Show in 1888. Its parentage was not recorded, but it is a Selenipedium of the Sedeni group.

Lælia × Horniana was raised by Mr. F. Horn, Orchid grower to Baron Nathaniel de Rothschild, of Hohe Warte, near Vienna, from L. purpurata ♀ and L. × elegans ♂. It was described as a lovely thing.

Cypripedium × Pageanum was raised by M. Page, of Bougival, near Paris, from C. superbiens and C. Hookeræ. It is not stated which was the seed parent.

Cypripedium × chelseense was raised in the establishment of Mr. William Bull, of Chelsea, from C. Lowii and C. barbatum purpureum, and is said to be the inverted mule of C. × calanthum, raised by Messrs. Veitch, but to have more of the character of C. Lowii than that one.

Cypripedium × Savageanum was raised by Messrs. Seeger and Tropp, of East Dulwich, from C. × Harrisianum ♀ and C. Spicerianum ♂. A note states that the opposite cross resulted in C. × Seegerianum, which, however, is not described.

Cattleya × flaveola was raised in the establishment of Messrs. Backhouse and Son, of York, from C. intermedia and probably C. guttata. Thus it would appear to be a variety of C. × picturata.

The most beautiful hybrid of the year, and a very remarkable one too, was Phalænopsis × John Seden, obtained by crossing P. amabilis, Blume (P. grandiflora) with the pollen of P. Lueddemanniana. The flowers are intermediate in structure, densely spotted with light purple on a cream-white ground. The seed was sown in November, 1881. It is one of the most beautiful hybrids raised in the Royal Exotic Nursery.

Cattleya citrino-intermedia was another very remarkable hybrid, raised by Dr. Harris, of Lamberhurst, from C. intermedia ♀ and C. citrina ♂. It was the first, and is still the only hybrid in which the last-named species had participated. The plant has an erect habit, like C. intermedia, but the flowers are pendulous as in C. citrina, but cream-white, instead of bright yellow. The vegetative organs most resemble those of the mother plant, while the flowers show just as strongly the influence of the pollen parent, though both are somewhat modified in character. It is curious to note how the hybrid has succeeded in combining the erect habit of one parent with the pendulous one of the other. It flowered when $6\frac{1}{2}$ years old. We must here point out that it was not this Dr. Harris who first gave Mr. Dominy the idea of hybridising Orchids, as stated at p. 133.

Phalænopsis × F. L. Ames was another beautiful hybrid raised by Mr. Seden, from P. amabilis (Blume) ♀ and P. × intermedia ♂, whose characters it well combines. It flowered when a little over five years old, and was dedicated to the Hon. F. L. Ames, of North Easton, Mass., U.S.A.

Phalænopsis × Leda appeared as a stray seedling in Messrs. Veitch's establishment. Hence its parentage is somewhat doubtful, though it belongs to the tendril-bearing group.

Anguloa × intermedia was raised by Mr. Seden from A. Clowesii ♀ and A. Ruckeri ♂, and thus should be a variety of A. × media, which is believed to have been derived from these two species. From the description, however, it evidently differs in colour.

(*To be continued.*)

LYCASTE SKINNERI ALBA.

On p. 113 it is stated of Lycaste Skinneri, that "the variety alba appeared amongst the first importations." Now I think Mr. Skinner first introduced this plant in 1841, and many varieties were from time to time introduced, but a white one was not seen before 1856, when the first one opened with myself, during the time I had charge of the collection of Messrs. Thos. Jackson and Sons, at Kingston, and I think it was about ten years afterwards that the next instance of its flowering occurred, at Meadowbank, near Glasgow, when the celebrated collection of Mr. Dawson was under the care of Mr. Anderson, and it remained a scarce plant for many years afterwards. Now it has become a frequent plant in our collections. I am quite able to endorse what follows, that it has ever since been regarded as a chaste and very beautiful form.

WILLIAM HUGH GOWER.

[We are obliged for Mr. Gower's note, which is certainly interesting. The remark referred to arose through a slip of the memory. When the variety alba was figured in *Lindenia* (vol. iv., p. 21, t. 153) a claim was put forward that M. Linden, and not Mr. Skinner, was the original discoverer of Lycaste Skinneri, and that it first received the name of Maxillaria virginalis, in Belgium. It was through a confusion of this M. virginalis with the variety alba that the mistake arose. Mr. Skinner's discovery, however, dates from 1839, and it was described from dried specimens collected by him as early as June, 1840, under the name of Maxillaria Skinneri, as has elsewhere (*Reichenbachia*, ser. 2, p. 39) been pointed out. But the variety alba is figured in *Pescatorea* (t. 39), which was published in 1860, so that its second appearance was evidently before the "ten years later" mentioned by Mr. Gower.—ED.]

THE ROSEFIELD COLLECTION.

ROSEFIELD, Sevenoaks, Kent, is the residence of De Barri Crawshay, Esq., an enthusiastic amateur of Orchids, whose collection contains many superb varieties of Odontoglossum crispum, Cattleya Mossiæ, C. Mendeli, and numerous other showy species, as well as the original plant of the rare and handsome Lælia × Crawshayana (Rchb. f.), supposed by Mr. Crawshay to be a natural hybrid between L. autumnalis and L. albida. Three houses are devoted to Orchids; two cool ones, containing chiefly Odontoglossums and a few other things which require cool treatment, and a large intermediate house, in which Cattleyas and Lælias, with a variety of other showy Orchids are grown. No special provision is made for those which require special heat, though a few Dendrobiums and Angræcums are grown. But with regard to the others, many very interesting features may be observed in the collection.

Odontoglossums are special favourites, and here, as elsewhere, the beautiful O. crispum takes the first place. A large number of select varieties are grown; about three dozen plants were either in flower or in bud during the first week in June, while many were over. This beautiful plant flowers almost throughout the year, and it is interesting to note that for four entire years the collection was never without an expanded flower of it, even in the dullest season, and Mr. Crawshay only broke this succession when he commenced weeding out all poor forms, in 1890, which he rigidly continues throughout the whole collection.

We may pause to notice a few of the most distinct varieties in the collection. The one called "Princess May," which Her Serene Highness pleasantly, as usual, allowed Mr. Crawshay to dedicate to her, is a grand white variety, the flowers being heavy and overlapping. "Mrs. De B. Crawshay" is a massive form of the first rank, with thick white flowers four and a half inches across, and the petals one and five-eighths inches broad. This remarkable variety produced a spike with eleven flowers in October last, and now carries a nine-flowered one larger than ever. "Pride of Rosefield" is somewhat similar to the last, but the flowers are slightly smaller, and have a tinge of rose. "Miss Florence Bovill" has the flowers suffused with deep violet and the segments heavily blotched. O. c. Bonnyanum is another grand variety, which flowered early in the year. The varieties guttatum and roseum are also represented by many fine forms. Lastly, must be mentioned the grand variety "De B. Crawshay," which received an Award of Merit from the Royal Horticultural Society on May 9th last. Mr. Crawshay showed me a photograph of this spike, and also a coloured drawing of a single flower, the latter executed by himself. It is a most beautiful variety, somewhat resembling apiatum, though hardly so round a flower. The plant, however, is a much smaller one, and the spike carried twelve flowers.

Mr. Crawshay has many others that are prevented from blooming this year, as his practice is to let some of his fine things have a rest occasionally, in order to strengthen the plants.

All the other showy Odontoglossums are well represented by choice varieties, among which may be mentioned many fine forms of O. triumphans, including the magnificent Rosefield variety, which has received a First-class Certificate from the Royal Horticultural Society. O. cordatum, with four handsome spikes; several O. Harryanum, showing for flower; and an excellent batch of O. Rossianum, all good varieties. O. Hallii is also well represented, the beautiful dark variety nigrum being exceptionally fine. One plant of O. Pescatorei threw up a very strong spike, with thirteen branches and 111 flowers, but being unfortunately injured it was cut off before the flowers expanded. Next year it should produce a phenomenal inflorescence.

Hybrid Odontoglossums are specially looked after, and the collection contains numerous very interesting forms, including a fine dark O. × tentaculatum, and forms of O. × Wilckeanum, of which the Rosefield variety is exceptionally large and beautiful. O. × Andersonianum and O. × Ruckerianum are represented by grand varieties, which are mostly resting this year, but one of the former, called Crawshay's variety, received an Award of Merit from the Royal Horticultural Society on the 11th of April last.

Mr. Crawshay has recently examined many importations of Odontoglossum, and selected a series of very distinct-looking bulbs, which, judging by appearances, should contain many hybrids and good varieties. On one plant two nice little seedlings were found, but it is impossible to say whether they are from hybrid seed.

A batch of about forty plants of Cattleya citrina succeed well with the Odontoglossums, being attached to blocks of charred wood. Cool treatment is one of the secrets of success with this Cattleya. Epidendrum vitellinum and Disa grandiflora, with its fine variety Barrellii, also grow well here, as well as Oncidium tigrinum and O. macranthum, the latter now showing for flower. A batch of the polymorphic Masdevallia Harryana contains several very fine forms, including the Trentham variety, Bull's Blood, and versicolor. Here also is the true M. Veitchiana grandiflora, with its giant blooms nearly double the size of the typical form beside it. The beautiful Miltonia vexillaria is, of course, represented in quantity.

The Cattleya house contains a fine series of Cattleya Mossiæ and C. Mendeli, grand forms of C. gigas, of which "Mrs. De B. Crawshay" takes precedence with its immense deep purple lip almost devoid of yellow. C. Mendeli Rosefield variety is a lovely form. Numerous fine plants of C. labiata show growth well advanced, while C. Gaskelliana alba, the original variety that received a First-class Certificate from the Royal Horticultural Society in July, 1884, is still here among other grand forms.

Turning to the Lælias we must first note four plants propagated from

the original L. × Crawshayana, a beautiful form described from this collection. L. purpurata, a noble Orchid, whether in or out of flower, was coming on in quantity. There are several grand varieties, including alba, Russelliana, gigantea, an enormous flower, and a grand flat dark variety called De B. Crawshay. L. anceps grows here like a weed, and is strongly represented. Among white forms are the varieties Stella, Sanderiana, and Williamsiana, while the Rosefield variety is a grand dark form, with very large flowers, and petals shaped like those of the variety Dawsoni. The varieties Hilliana, morada, Protheroeana, and blanda, are also represented. We must also note a grand dark form of L. Perrinii, and four plants called L. × elegans alba, which we believe to be a natural hybrid between Cattleya intermedia and Lælia purpurata, whose proper name is Lælio-cattleya × Schilleriana.

In this house also are grown several plants of Vanda suavis, Rosefield variety, and V. tricolor, with its varieties planilabris and Warneri, the latter very rare. These were passing out of flower. A grand plant of Lycaste lanipes, Mrs. Studd's variety, which carried sixteen immense blooms on one bulb, has leaves almost like those of a palm. Two plants of the graceful Brassia verrucosa were also nicely in flower. Miltonia Moreliana, in quantity, is growing almost like grass, and includes Mrs. Studd's wonderful variety atrorubens, such a form as is seldom seen. Cymbidium Lowianum, too, formed a very fine mass, and was a perfect picture of floral beauty. Very few Cypripediums are grown, but C. barbatum and C. Lawrenceanum were both observed in bloom.

Hybridising Orchids is always a most interesting occupation, and if carried out with intelligence is sure to yield some important results sooner or later. Mr. Crawshay has not escaped the fascination, and at the present time the capsules of several very interesting crosses are maturing in the collection. Sophronitis grandiflora crossed with white Lælia anceps, and the reversed cross, have both been effected, while in Odontoglossums there are good pods of O. Rossii crossed with the pollen of O. × Wilckeanum, and also with that of O. Hallii. These are crosses which of course cannot occur in a state of nature, but one particular cross has been effected which should solve the parentage of the natural hybrid O. × Andersonianum. With a view to clearing up a very interesting scientific question, Mr. Crawshay has fertilised O. crispum with the pollen of O. gloriosum, and a good capsule is now developing. This cross would appear to be easily effected in a state of nature, and we may hope that equal success may be attained at home. A very interesting generic cross has also been made, between Odontoglossum and Brassia, and the resulting pod looks at present perfectly healthy. But the hybridist has many difficulties to contend with, and must undergo many disappointments before his labours are ultimately crowned with success. A capsule, apparently healthy, may contain nothing but chaff. Or if good seed is obtained, it may fail to germinate, or to pass successfully through the perils

which Orchidic babyhood is heir to. A vulgar slug may devour the dainty morsel at a single meal, and we believe that a single insignificant thrip, if it gets into the growing point of a young Odontoglossum, will injury it beyond recovery. We may hope that some of Mr. Crawshay's experiments will be crowned with success.

Mr. Crawshay likes to be able to preserve the characters of his favourites, and to compare those together which flower at different seasons of the year. To this end he has developed a system of drying the flowers, all in their natural shapes, and in most cases with but slight diminution of their brilliant colours. This is effected by simply drying the flowers in sand, and afterwards arranging them in shallow cabinet drawers, something like a collection of butterflies. An inspection of this collection of dried flowers afforded the writer quite as much pleasure as that of the living ones in the houses, and enabled him to carry away such an impression of the collection as without it could only have been obtained by several visits at different periods of the year. Lælia × Crawshayana, for example, was not in flower, yet on retiring to Mr. Crawshay's study every one of its characters could be inspected at leisure, the shape and markings of the flower, and even the colour, almost as easily as in the living flower. And the same may be said of nearly all the before-mentioned plants except the fleshy Vandas, etc. Of Odontoglossum crispum he has upwards of 150 dried flowers. It is remarkable how little changed are many of the flowers; even the teeth of the crest and wings of the column being as perfect as when alive, and the flowers of Odontoglossum × Wilckeanum and O. crispum De B. Crawshay are almost lifelike.

The *modus operandi* is so simple that it ought to be more widely known. All that is necessary is some clean sharp dry sand and a box of some kind. The ovary is cut off to facilitate drying, and the flower is then placed on a layer of sand half an inch deep, and the box gradually filled to a depth of at least two inches, so as to prevent shrivelling. The sand must be gently filtered in, so as to preserve the natural shape of the flower. The box is then placed in some warm and dry place for a few days, when the operation is complete, and the sand may be filtered out again. The chief drawback to this system is that the dried flowers take up a large amount of space, and cannot be placed between sheets of paper like herbarium specimens. Unfortunately, fleshy flowers, such as Lycastes, and many others, lose their colours just the same as in the ordinary method, and the only advantage the present system has in the case of fleshy flowers is that they can be dried with breaking the parts, which is almost unavoidable when pressing them between sheets of paper. Perhaps a combination of the two systems would give the best results, for fleshy flowers which have been dried in sand can afterwards be flattened without breakage, if placed for a few minutes in warm water. But the advantage of being able to preserve flowers, and to

compare them at any season of the year, is so obvious that it is a wonder the system is not more widely adopted.

Another very interesting feature at Rosefield is a little collection of British Orchids, which have been gradually brought in and planted on a grassy bank, where they seem to feel quite at home. Here were various plants of Orchis mascula, O. Morio and a rare pink variety, O. maculata and its pretty variety alba, O. latifolia, O. pyramidalis, Ophrys apifera, and O. aranifera, Gymnadenia conopsea, Listera ovata, and Herminium monorchis, quite a charming little group, but owing to the exceptionally dry season some of them were over.

Mr. Crawshay seems imbued with Orchidic lore, as he knows the history of every plant in his collection, and all his operations are conducted in an intelligent and methodical manner, as his records everywhere show. In fact, the collection generally shows the great interest taken in it by its enthusiastic possessor, and the cultural skill of his gardener, Mr. Sydney Cooke.

EULOPHIELLA ELISABETHÆ.

Our attention has been called to the statement at p. 207, that M. L. Hamelin was the discoverer of this plant. It is said that although he sent home the plants recently sold in England, the discoverer of the species was M. Sallarin, a collector of Messrs. Linden, L'Horticulture Internationale, Brussels, who has since died. It is said that a single plant appeared in an importation of Angræcum sesquipedale and Grammangis Ellisii, sent home by M. Sallarin. Although evidently distinct from the outset, its real character was not known until it flowered. In March, 1891, M. Hamelin wrote to Messrs. Linden that M. Sallarin, of whom news had not been received for some months, had been drowned by the upsetting of a small pirogue, when crossing an arm of the sea. At the same time M. Hamelin offered his services in collecting plants. When the Eulophiella flowered, a water-colour drawing was made, which was sent to M. Hamelin, together with the part of the *Lindenia* in which the figure and description appeared, and several additional copies of the coloured plate, requesting him to collect plants on their account. In October, 1892, M. Hamelin replied that he had recognised the plant on receipt of the documents, and would collect and forward living specimens. We record these statements, because of the light they throw upon the question of the discovery of this remarkable plant. The subsequent history of the transaction is on record, and need not be repeated here, save and except one choice little extract: "Tell me what price you offer me for the remainder, because I have entirely destroyed the plant in its native habitat" ("Veuillez me dire quel prix vous m'offrirez du pied, car j'ai completement détruit la plante sur les lieux d'origine").

LÆLIO-CATTLEYA × ELEGANS AND L. × SCHILLERIANA.

THESE two handsome Orchids are now flowering in various collections, and the receipt of several inquiries respecting them, in four instances accompanied by flowers, suggests the desirability of placing on record the following notes, as some of their varieties have been, and still are, considerably confused. Both are natives of the Santa Catherina district of South Brazil, and from a variety of considerations it is certain that both are of hybrid origin.

In the district in question, three well-known species occur, and in certain localities, at least, they grow intermixed, or in close proximity to each other. These are Lælia purpurata, Cattleya Leopoldi, and C. intermedia. The former of these has stout pseudobulbs, each with a single erect longish leaf, and the flower has an entire lip, and eight pollinia; the two latter have slender stem-like pseudobulbs, each with a pair of rather short spreading leaves, and the flowers have a three-lobed lip, and four pollinia. The two latter, as is well known, are markedly different from each other in the colour of their flowers and in various details of structure.

It is very interesting to observe the way in which these characters are combined in the hybrid offspring. Some of the pseudobulbs bear a single leaf, as in the Lælia parent, and others a pair, as in the Cattleya; while as regards their shape, they are either intermediate or incline towards one or the other parent. The same remark applies to the flowers, both as regards shape and colour, while the pollinia are very unequal, the lower series being much smaller that the upper, and in some cases quite rudimentary, as in all the hybrids artificially raised between these two genera.

The series of natural hybrids now in gardens have sometimes been referred to several different types, as will be seen by the references cited below, and at others brought together as varieties of one. It is, however, certain that we have two distinct hybrids to deal with, both of which are as variable as hybrids generally are. One is the hybrid between Lælia purpurata and Cattleya Leopoldi, or Lælio-cattleya × elegans proper, the other that between Lælia purpurata and Cattleya intermedia, or Lælio-cattleya × Schilleriana, sometimes incorrectly referred as a variety of the former. It is not desirable, however, that hybrids of different parentage should be confused together.

We may first note Lælio-cattleya × elegans, otherwise L. × purpurato-Leopoldi.

This was originally discovered by François De Vos, a collector for the late M. Ambrose Verschaffelt, of Ghent, on the island of Santa Catherina, as long ago as 1847, and flowered for the first time in Europe in the following year, when it was described as Cattleya elegans. Its hybrid origin was not

then suspected, indeed, neither of its parents were then known, which seems rather curious. This original form had the sepals and petals light rosy purple, except at the base and along the centre, which parts were light green, and the lip strongly three-lobed, the front lobe very broad, and, together with the tips of the side lobes, deep violet-purple, the remainder being nearly white. This original form was afterwards called variety Morreniana.

Round this original type the different varieties group themselves, diverging more or less in various directions. The variety Tautziana is near to the original type, and differs chiefly in the possession of a yellow stain on either side of the throat. Bluntii has rather darker colours, and the front lobe of the lip is more elongated. Dayana again differs in having the throat of the lip orange-yellow, like some forms of Lælia purpurata. The one called prasiata has the disc of the sepals green, and the throat sulphur-yellow, though in other respects it conforms to the type. Allied to the last is the variety picta, which has many small dark purple spots on the sepals and petals, and the throat yellow. The spots are, of course, derived from Cattleya Leopoldi. The variety platychila is also nearly allied to prasiata, but wants the green disc to the sepals, while the lip is very broad and flat, and the lobes nearly confluent. Houtteana has rose-coloured flowers with a little green near the base of the sepals and petals, and some yellow on the sides of the throat.

A few other varieties differ chiefly in colour, and some of them are extremely brilliant. Of these Turneri is characterised by its very deep colour, and the distinctly stalked obovate front lobe of the lip. The one called blenheimensis is rather smaller, with the disc of the sepals lighter, the front lobe of the lip small and sessile, and the throat white. Broomeana and Littleana are both very dark varieties, but differ from Turneri in having the short broad front lobe of the original form.

Two or three others have the sepals and petals inclining to buff or nankeen-yellow; as incantans, Nyleptha, and Measuresiana. In the first these organs are nankeen-yellow, with the lip much as in the original form. In the second, they are sulphur-yellow faintly tinged with rose; and in the third sulphur-white, inclining to buff behind, and the lip white with crimson-purple lobes.

Four other very distinct varieties remain to be mentioned. The one called lobata takes its name from the fact that the petals have an obtuse lobe on either side. They are washed with light brownish purple on the margins, and the sepals have innumerable brown spots on their surface. Brysiana is a very remarkable form. The sepals and petals are light green suffused with dull purple, and covered with numerous small darker spots, while the lip is three-lobed and dull violet-purple in front. It appeared in 1856, but seems to have long been lost sight of. The variety gigantea is also very marked. It has nearly white sepals and petals which bear

numerous small, rosy purple spots, while the front part of the lip is amethyst-purple. Lastly comes Cooksoni, which differs from every other in having an entire lip, closely resembling that of Lælia purpurata. The sepals and petals are light olive-green with some small purple spots towards the summit.

Lælia × pachystele may also belong here. It has rose-coloured sepals and petals, and a white lip with three rather narrow purple lobes.

The following is a list of the various forms of this polymorphic hybrid, with references to published descriptions and figures :—

Lælio-cattleya × elegans, Rolfe in *Gard. Chron.*, 1889, i. p. 519 ; *Id.*, ii. p. 79 ; *Id.* in *Reichenbachia*, ser. 2, I., p. 43.

Cattleya × elegans, C. Morr. in *Ann. de Gand.*, iv. p. 93, t. 185 ; *Bot. Mag.*, t. 4,700 ; *Pescatorea*, t. 23 ; *Ill. Hort.*, xi. t. 402 ; Lindl. in *Gard. Chron.*, 1853, p. 582.

Lælia × elegans, Rchb. f. in *Otto and Dietr. Allg. Gartenz.*, xxiii. p. 242 ; *Puydt, Les Orch.*, p. 281, t. 21 ; *Veitch Man. Orch.*, ii. p. 66, in part ; *Orchid Album*, vii. t. 331 (var. Morreniana, Rchb. f.).

Bletia × elegans, Rchb. f. in *Walp. Ann.*, vi. p. 427.

Lælia × Brysiana, Lem. in *Ill. Hort.*, iii., *Misc.*, p. 48 ; *Id.*, iv. t. 134.

Lælia × elegans var. Bluntii, Rchb. f. in *Bot. Zeit.*, xxii. p. 298 (in note) ; *Williams Orch. Gr. Man.*, ed. 6, p. 357. Bletia × elegans var. Bluntii, Rchb. f. *l.c.*

Lælia × elegans var. Dayana, Rchb. f. *l.c.* (in note.) Bletia × elegans var. Dayana, Rchb. f. *l.c.*

Lælia × elegans var. gigantea, Williams in *Gard. Chron.*, 1870, p. 1125 (in note) ; *Veitch Man. Orch.*, ii. p. 67. L. × gigantea, Warn., ex *Proc. Roy. Hort. Soc.*, ii. p. 247 ; *Warn. Sel. Orch.*, ser. 1, t. 6.

Lælia × elegans var. Houtteana, Rchb. f. in *Hamb. Gartenz.*, xvi. p. 281 ; *Lindenia*, ii. p. 49, t. 71.

Lælia × elegans var. incantans, Rchb. f. in *Gard. Chron.*, 1887, ii. p. 333.

Lælia × elegans var. Littleana, *Hogg. Gard. Year-Book*, 1886, p. 65.

Lælia × elegans var. lobata, Rchb. f. in *Gard. Chron.*, 1869, p. 1158.

Lælia × elegans var. Measuresiana, Rchb. f. in *Gard. Chron.*, 1887, i. p. 209.

Lælia × elegans var. Nyleptha, O'Brien, in *Gard. Chron.*, 1888, i. p. 178, with fig.

Lælia × elegans var. picta, Rchb. f. in *Gard. Chron.*, 1884, i. p. 140.

Lælia × elegans var. platychila, Rchb. f. in *Gard. Chron.*, 1885, ii. p. 134.

Lælia × elegans var. prasiata, Rchb. f. in *Bot. Zeit.*, xxii. p. 298 (in note) ; *Orchid Album*, iii. 97 ; Rchb. f. in *Gard. Chron.*, 1883, i. p. 11 (var. indica). Bletia prasiata, Rchb. f. in *Bot. Zeit.*, xxiv. p. 298.

Lælia × elegans var. Tautziana, Rchb. f. in *Gard. Chron.*, 1888, i. p. 330.

Lælia × elegans var. Turneri, *Veitch Man. Orch.*, ii. p. 67. L. × Turneri, *Warn. Sel. Orch.*, ser. i. t. 12.

Lælia × pachystele, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 596.

Lælio-cattleya × elegans var. blenheimensis, Sander ex Rolfe in *Reichenbachia*, ser. 2, I., p. 43, t. 20 ; Lælia × elegans var. blenheimensis, Williams *Orchid Album*, ix., t. 413.

Lælio-cattleya × elegans var. Cooksoni, Rolfe in *Gard. Chron.*, 1889, ii. p. 586.

Lælio-cattleya × elegans var. Broomeana, Rolfe in *Lindenia*, viii. p. 25, t. 347 ; Lælia × elegans var. Broomeana, O'Brien in *Gard. Chron.*, 1890, ii. p. 214 ; *Orchid Album*, ix., t. 413.

We may now consider the second hybrid, Lælio-cattleya × Schilleriana, otherwise L. × purpurato-intermedia.

This originally appeared in 1855, in the collection of Consul Schiller, of Hamburg, and was said to have been imported from Rio Janeiro, though it

seems more probable that it came from the Santa Catherina district. The original form had white flowers, and an obscurely three-lobed lip, the front lobe and tips of the side lobes amethyst-purple, a purple line along the disc, and a little yellow in the throat.

Round this original form a number of variations group themselves, which, if less numerous than in the preceding, have been more misunderstood, as will be seen by the under-mentioned synonymy. The variety Stelzneriana has a nearly entire lip, as in Lælia purpurata, with some light yellow in the throat. The one called euspatha is very similar, but has a broader lip with yellow throat, and a slight flush of pink in the sepals and petals. The variety irrorata has a three-lobed lip, and rather narrower sepals and petals. Wolstenholmiæ has a nearly white ground with some veins and dots of purple along the margins. The lip is narrow and nearly entire, amethyst-purple in front with a maroon disc, and the sides much paler. Warneri is a form with a nearly entire lip which, like the preceding, has hitherto been referred to L. × elegans. The form called Lælia × elegans alba also belongs here, and has a three-lobed lip as in Cattleya intermedia. Lastly may be mentioned Lælia × Measuresiana, which is apparently also a variety of the present one. It has white flowers with an entire lip, rose-coloured in front, and veined with purple in the centre, and stained with yellow in the throat.

As in the preceding case, we see in the present hybrid a distinct combination of characters derived from the parent species, both in the vegetative organs and flowers, and sometimes we find the entire lip of Lælia purpurata, at others the three-lobed one of Cattleya intermedia. Considering the marked difference between Cattleya Leopoldi and C. intermedia, there should be littledifficulty in distinguishing the two corresponding hybrids.

The following list represents the various forms of the present hybrid :—

Lælio cattleya × Schilleriana, Rolfe in *Gard. Chron.*, 1889, ii. p. 155.

Lælia × Schilleriana, Rchb. f. in *Otto and Dietr. Allg. Gartenz.*, xxiii. p. 322.

Bletia × Schilleriana, Rchb. f. in *Walp. Ann.*, vi. p. 424.

Lælia × elegans var. Schilleriana, *Veitch Man. Orch.*, ii. p. 67, with fig. ("L. elegans" opposite p. 65.

Lælia × elegans var. alba, Burbidge in *The Garden*, xvii. p. 132, t. 218 ; *Orchid Album*, i. t. 30 ; *Veitch Man. Orch.*, ii. p. 66.

Lælia × elegans var. Wolstenholmiæ, Rchb. f. in *Gard. Chron.*, 1865, p. 698 ; *Warn. Sel. Orch.*, ser. 2, t. 29 ; *Orchid Album*, vi. t. 285.

Lælia × euspatha, Rchb. f. in *Hamb. Gartenz.*, xvi. p. 420 ; *Reichenbachia*, ser. 1, I. p. 17, t. 8. Bletia × euspatha, Rchb. f. in *Walp. Ann.*, vi. p. 424.

Lælia × irrorata, Rchb. f. in *Hamb. Gartenz.*, xv. p. 57 ; Rchb. f. in *Gard. Chron.*, 1883, i. p. 142 (var. Scottiana) ; *Id.*, 1887, ii. p. 520 (var. Gaskelliana). Bletia irrorata, Rchb. f. in *Walp. Ann.*, vi. p. 426.

Lælia × Measuresiana, *Williams Orch. Gr. Man.*, ed. 6, p. 636 ; *Orchid Album*, v. t. 207.

Lælia × Stelzneriana, Rchb. f. in *Hamb. Gartenz.*, xvi. p. 282, also p. 420 ; *Fl. d. Serres*, t. 1494 ; L. × elegans var. Stelzneriana, *Veitch Man. Orch.*, ii. p. 67.

Lælia × elegans, Warneri, *Williams Orch. Gr. Man.*, ed. 6, p. 358. L. Warneri, *Warn. Sel. Orch.*, ser. 3, t. 1.

R. A. R.

NOVELTIES.

SELENIPEDIUM SARGENTIANUM, Rolfe.—A new Selenipedium has appeared among the importations of Messrs. F. Sander and Co., of St. Albans, from the Pernambuco district, making the fourth Brazilian species now known. One, however, S. Isabelianum, Rodr., belongs to the section Foliosæ, and is allied to S. Chica, Rchb. f., the fruits of both being used like Vanilla. The second is S. vittatum, Rchb. f., which is still very rare in cultivation, and the third, S. paulistanum,[1] is, I believe, only known in Europe by description. The present one, however, is more nearly allied to S. Lindleyanum, from Mount Roraima, in British Guiana, to which it bears a general resemblance in shape and colour, though it differs in a variety of particulars, and especially in the presence of a pair of small white tubercles on the inner margin of the side lobes of the lip, by which it may at once be distinguished from every other. It is dedicated to Prof. C. S. Sargent, Director of the Harvard University Arboretum, and editor of *Garden and Florist*. Its characters are set forth in the accompanying description :—

Habit and foliage near S. Lindleyanum, Rchb. f. Upper sepal elliptical-oblong, subobtuse, pubescent, 1½ in. long, 8 lin. broad ; lower one broadly suborbicular-elliptical, concave, 1 in. long, 10 lin. broad. Petals subspathulate-linear, obtuse, with deflexed apex, pubescent except on the disc, 2¼ in. long, 5 lin. broad. Lip oblong, 1½ in. long, 8 lin. broad ; front-lobe ½ in. long ; infolded side-lobes 5 lin. deep, with a small white tubercle on either side near the middle of the lower margin ; mouth elliptical. Staminode obovate-quadrate, pubescent, 4 lin. broad. Ground colour of flower light greyish green ; the upper sepal faintly suffused with pink in front, suffused and veined with bright red-pink behind ; the lower one more distinctly veined ; petals veined in front with purplish red near the apex and along the margins, darker behind ; lip light olive-green, slightly veined with pink on the sides, the side lobes wholly marbled with light brown, except the two white tubercles ; staminode very light green with faint pink hairs.

LYCASTE ROSSIANA, Rolfe.—This is a yellow Lycaste allied to L. cruenta, Lindl., but the flowers are a little smaller, and the lip is without the basal cavity and the broad transverse maroon band seen in that species. The crest is also different in shape, and the disc bears numerous longish hairs which are not present in that species ; yet it is quite different from L. crinita, Lindl., which also has a hairy disc. It appeared in the collection of H. J. Ross, Esq., of Florence, Italy, in June of the present year :—

Sepals lanceolate-oblong, subacute, nearly 1½ lin. long, greenish yellow with a few white hairs at base. Petals elliptical-oblong, subacute, 8 lin. broad, deep orange-yellow with a few light brown spots near the hairy base. Lip three-lobed, faintly barred with transverse brown lines on the disc and side lobes ; front lobe ovate ; obtuse, 7 lin. long, 6 lin. broad ; side lobes rounded ; crest rounded in front, 2 lin. broad ; free apex scarcely as long, with some longish hairs on the disc. Column 9 lin. long, yellow, its face hairy and mottled with light red-brown, which is darker and more suffused near the base. Habitat not recorded.

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[1] S. paulistanum, Rolfe. Cypripedium paulistanum, *Rodr. Gen., et Sp. Orch. nov.*, I. (1877), p. 203.— **Hab. S. Paulo, Brazil.**

CŒLOGYNE CLARKEI, Kränzlin.—A botanical species belonging to the section Filiferæ, introduced by Messrs. F. Sander and Co., of St. Albans, which must be extremely close to C. prolifera, Lindl., if not identical with it. The sepals and petals are described as light brown and the lip pale yellowish brown, with a darker border to the front lobe and some small spots on the side ones.—*Gard. Chron.*, June 24th, p. 741.

LUEDDEMANNIA PESCATOREI.

A plant of this remarkable and handsome Orchid recently flowered in the Kew collection, its long pendulous raceme carrying about forty-five flowers, and reminding one of an elongated Acineta, or Aërides, though the habit is quite unlike that of the last-named. The sepals are yellow marked and suffused with brown, and the petals and lip deep yellow. The lip is three-lobed, the front lobe triangular and acute, with reflexed apex, the side lobes erect, and the disc hairy with an erect stout tooth at the base. It has also flowered at Glasnevin on two or three occasions during recent years. The species is a native of Ocana, growing in the mountains at about 6–9000 feet elevation, and was introduced in 1848 by M. Linden. Soon afterwards it flowered for the first time in Europe in the celebrated collection of M. Pescatore, at Paris. It was described by Lindley as Cycnoches Pescatorei, the author stating that the raceme was a yard long, and bore ninety-six flowers. It was afterwards elevated to the rank of a distinct genus by Reichenbach, which, notwithstanding some later observations, is evidently its true position. Bentham again referred the plant to Cycnoches, with which it has no close affinity, either in habit or structure, and it is pretty evident that he had very little material on which to form an opinion. But the most remarkable observations with regard to this singular genus are those of Reichenbach, in a paper read at the Orchid Conference in 1881 (see *Journ. Roy. Hort. Soc.*, vii. p. 20), that Lueddemannias "may be sexes of Acineta, perhaps also of Peristeria." He bases the argument chiefly on the fact that Messrs. Veitch had one year what appeared to be a new Lueddemannia, while next year it produced the abominable inflorescence of Ascineta erythroxantha—from which we may safely conclude that it was not a Lueddemannia at all. The flowers of this genus are certainly hermaphrodite, which precludes the possibility of their being unisexual: besides which they have been produced in Europe on numerous occasions, though we have no authentic evidence of the production of a second sex. Such a striking plant is worthy of more extended culture, for we believe that at present it is represented in very few collections.

Lueddemannia Pescatorei, Lind. and Rchb. f. in *Bonplandia* ii. (1854), p. 281; *Pescatorea* t. 22; Rolfe in *Gard. Chron.*, 1889, ii. p. 183; *Bot. Mag.*, t. 7123.

Cycnoches Pescatorei, Lindl. in *Paxt. Fl. Gard.*, i. (1850–1), p. 123.

PHAIUS × HYBRIDUS VAR. GRAVESII.

LAST year a fine hybrid Phaius flowered in the collection of D. O. Drewett, Esq., of Riding, Mill-on-Tyne, which had been obtained by crossing Phaius grandifolius with the pollen of P. Wallichii. In February last another equally fine form flowered in the collection of H. Graves, Esq.,

Fig. 13. PHAIUS × HYBRIDUS VAR. GRAVESII.

of Orange, New Jersey, U.S.A., which was raised from the reversed cross, P. Wallichii in this instance being the seed parent. It flowered when three and a half years old. The general habit and shape of flower is much like that of P. Wallichii; the flower five inches across, the sepals and petals cinnamon-brown in front and white behind, and the lip white with a yellow

keel, and rose-pink in front. It was described as P. × Gravesii, but being derived from the same two parents as P. × hybridus, which it naturally much resembles, it must be considered as a variety of the same. Our illustration is reproduced from a photograph kindly sent by Mr. R. M. Grey, Mr. Graves' gardener.

Phaius × hybridus, O'Brien, var. Gravesii, Rolfe.

P. × Gravesii, Grey in *Gard. Chron.*, 1893, i. p. 357 ; *Orch. Review*, i. p. 167.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 210.)

Although so many of the Stauroglottis section of Phalænopsis are found in the islands, there are some that are found on the mainland, and others both on the mainland and in the various islands along the coast.

I may particularly mention Phalænopsis violacea, which is supposed to be confined to Sumatra, in which locality it is known to vary very much in colour. It is, however, found in Perak, on the mainland, and the variety there found is very distinct from the Sumatran plant, being of a uniform rose-purple throughout, the only other colour being in the side lobes of the lip, which are yellow.

Phalænopsis cornu-cervi, also belonging to this section, is found both on the continent and in Java and Borneo. It is probably more widely distributed than any other Phalænopsis, extending from 20° N. to 5° S. Although growing under so many different conditions, the flowers do not vary in the same way as the other kinds. The largest and finest plants I ever saw were growing in great masses on the trunks of the wild mango trees, in dense shade, in which position they flower very freely, and it is a pity that we never see such fine plants in England, as under such conditions they produce, not only numerous flower-spikes, but flowers good in form and shape, such as we have never seen in our English hothouses.

Phalænopsis Parishii, another of this group, is continental, and is not recorded as having been found in any of the islands. The best varieties I ever saw of this were in the mountain district, where I found it in very damp positions growing on the branches of trees hanging over the river; the branches on which the plants were growing were covered with live moss, in which the roots grew freely, and the plants were altogether much more robust than those found in the hills and exposed to very unfavourable conditions during the dry season. This plant and Phalænopsis Lowii are frequently deciduous in the countries in which they grow: only a few plants in very favourable and sheltered positions retaining their leaves during the dry season.

Phalænopsis Lowii is found growing in the low-lying country about sixty

miles up the Ghine river, east of Moulmein. In the low river delta there are many small groups of limestone rocks, sometimes only a few feet above the plain, sometimes two hundred or more. It is on these rocks or clinging to the bushes that grow out of them that this plant is found, in company with Doritis Wightii. As Phalænopsis Lowii is such a charming plant, when well grown, it may not be out of place here to note that really strong plants of it are not deciduous in favourable positions in its native habitat, and therefore such plants should not be allowed to become deciduous in our English houses. With careful attention plants of this and also P. Parishii cease to be deciduous, and get sufficiently strong to retain their leaves all the year round. Athough rather troublesome to train the plant into sufficient strength, the trouble is well repaid by the production of strong instead of weak flower-spikes. In Moulmein I have seen spikes quite three feet long, with many side branches, and at least a hundred flowers out at one time. When grown thus it is a difficult plant to beat. Flowering, as it does, in October, when most people are in their country houses, it is well worth the attention of the gardener; a really well-grown plant could not fail to be appreciated.

I may explain, for the benefit of gardeners and growers of these so-called deciduous Phalænopses, that the season during which they are at rest in the jungle, and lose their leaves, is very short. On the equator the rains only cease for about a month, and 15° N. of it only about two months so that growth recommences after a very short rest. If rested and allowed to become deciduous in our English houses, the resting season becomes much too long, the plant gets weaker and weaker and never does any good. I have now plants which have been eight years in England which retain their leaves all the winter, and are growing very strongly, and these always lose their leaves the first few seasons. My method is simply to keep the moss round the roots alive in the winter, which allows of sufficient moisture to prevent the leaves from drying up.

Phalænopsis Esmeralda and its numerous varieties are also classed under the head of deciduous plants; they are no doubt deciduous when in exposed positions in their native jungle, but they should never be grown as deciduous plants when in cultivation. The best variety of P. Esmeralda is, in my opinion, P. antennifera, principally because it is too robust in habit to be deciduous. This plant is not indigenous to Moulmein, but is brought up in quantity from the islands in the Mergui Archipelago, and I have seen the plant growing luxuriantly in Moulmein on heaps of clean gravel; not that I would recommend growing the plant on gravel in England, where the conditions are so different. Free drainage is however advisable, and living moss throughout the year, to prevent the plant getting weak by losing its leaves.

(*To be continued.*)

THE HYBRIDIST.

CYPRIPEDIUM × MULUS.

THIS is a noble and handsome hybrid, which might be described in a few words as an enlarged Cypripedium × porphyrochlamys of a lighter shade. One parent is, indeed, the same—namely, C. hirsutissimum—but in the present instance it was used as the seed parent, not the pollen parent. The pollen in this case was derived from C. Lawrenceanum, and as this species is allied to C. barbatum, the seed parent of C. × porphyrochlamys, the similarities and differences of the two hybrids are easily explained. In C. × mulus, the dorsal sepal is two and a quarter inches long by over two broad, suffused with light purple on a pale ground, the nerves olive-green with darker spots near the base, but inclining to purple near the margin, which itself is white. The petals are over three inches long by three-quarters of an inch broad, undulate, half-twisted near apex, and very ciliate, the basal part green, passing into light mauve-purple above, and with many blackish-brown shining dots. The lip is nearly two inches long, and suffused with light purple. The staminode is reniform and tridentate, light mauve purple, with light yellow-green nerves.

CYPRIPEDIUM × WATSONIANUM.

This is a bold and handsome hybrid, raised in the collection of Messrs. F. Sander and Co., of St. Albans, between Cypripedium × Harrisianum nigrum ♀ and C. concolor ♂, between which it is fairly intermediate in character. Both the dorsal sepal and petals are remarkably flat. The former is broadly ovate, nearly two inches wide, suffused with rosy purple, veined with green in the centre and purple at the sides, the apical margin being nearly white. The petals are light rosy purple, with a darker mid-nerve, and many suffused purple-brown spots forming a blotch near the base on the upper half, the extreme base being light green. In shape they are elliptical-oblong, and two inches long. The lip is rather small and neat, in colour almost wholly deep maroon-purple; and the staminode nearly semi-circular, with a tricuspidate apex, the colour light rosy-purple with green reticulations in the centre and a deep maroon tip. It has the dwarf habit and shape so characteristic of the hybrids derived from C. concolor, but in colour it approaches much nearer to the other parent. It is dedicated, by request, to Mr. W. Watson, Assistant Curator of the Royal Gardens, Kew.

SELENIPEDIUM × AINSWORTHII VAR. DELICATUM.

A very beautiful hybrid has been raised by Captain Hincks, of Terrace House, Richmond, Yorks, between Selenipedium longifolium var. Hinck-

sianum ♀ and S. × Sedeni candidulum ♂, which almost combines the shape of S. × Ainsworthii with the colour of S. × Sedeni var. leucorrhodum. S. × Ainsworthii was derived from S. longifolium var. Roezlii ♀ and S. × Sedeni ♂, and therefore our novelty must be considered a very light-coloured variety of the same. It is also a robust grower, and altogether a very promising plant.

Cypripedium × Vipani var. roseum.

This charming little plant was raised by Mr. T. Bond, gardener to C. Ingram, Esq., of Godalming, from C. niveum ♀ and C. philippinense Roebelenii ♂. It chiefly differs from the original type, raised by Captain Vipan, in having rather broader, more obtuse segments, which are somewhat suffused with light purple. It is densely spotted with light purple, chiefly along the nerves.

Cypripedium × Massaianum.

This is not only very handsome, but especially interesting as the first hybrid partly derived from C. Rothschildianum. C. × superciliare was the seed parent. The hybrid was exhibited by Messrs. F. Sander and Co., of St. Albans, the raisers, at a meeting of the Royal Horticultural Society, on July 11th last, and received an Award of Merit. The flowers were large, the upper sepal white, closely striped with chocolate red; the petals cream-white, tinged with green on the nerves, and profusely spotted with dark purplish crimson. The lip is large, tinged with rose in front, and paler behind.

Vanda × Miss Joaquim.

A hybrid, raised at Singapore by Miss Joaquim, between Vanda Hookeriana and V. teres, two Orchids which are said to be cultivated in almost every garden in Singapore. It is said to have the general habit of V. teres, with the form of flower of V. Hookeriana and the colour of the other parent. The sepals and petals are rosy violet, and the lip violet rose at the margin, passing into fiery orange, with a yellow disc. It is described as a very lovely plant, and a great improvement on both parents. It is being propagated by cuttings in the Botanic Gardens, Singapore.—Ridley in *Gard. Chron.*, June 24th, p. 740.

Masdevallia × Rebecca.

A graceful hybrid, raised by Mr. Robinson, gardener to F. L. Ames, Esq., Longwater, North Easton, Mass., U.S.A., between Masdevallia ignea erubescens ♀ and M. amabilis ♂. The flowers are intermediate in shape

and brilliant crimson-scarlet in colour.—Kränzlin in *Gard. Chron.*, June 24th, p. 740.

Masdevallia × Henrietta.

A beautiful hybrid, raised in the same collection as the preceding, between M. ignea erubescens ♀ and M. Shuttleworthii ♂. The flowers are intermediate in shape, striped and suffused with purplish on a yellowish ground. The flowers of three different plants are said to vary, one type inclining more towards M. Shuttleworthii than the other.—Kränzlin in *Gard. Chron.*, June 24th, p. 740.

Cypripedium × Clinkaberryanum.

A handsome hybrid, raised by Messrs. Pitcher and Manda, between Cypripedium philippinense Roebelenii and C. Curtisii, and named after Mr. H. A. Clinkaberry, gardener to the Hon. C. G. Roebling, of Trenton, New Jersey, U.S.A., into whose collection the single plant raised has now passed. The upper sepal is white, with about twenty purple stripes, and the drooping petals creamy white, spotted all over with purplish crimson. The lip is tinged with dull rose in front, paler behind. It bears some resemblance to C. × Morganiæ in shape.—O'Brien in *Gard. Chron.*, July 22nd, p. 86, fig. 18.

HARDY ORCHIDS FROM SEED.

Although so much success has been attained in this country in raising tropical Orchids from seed, very little is known about the raising of hardy ones, and we are therefore the more pleased to be able to call attention to so interesting a subject. In a little work by M. Correvon, of Geneva, entitled, *Les Orchidées Rustiques*, a summary is given of what is known on the subject, as we learn from a recent issue of the *Gardeners' Chronicle*, from which we extract the following particulars.

M. Correvon has reproduced the directions laid down by M. Moë, Curator of the Botanic Garden, Christiania, and as the latter has succeeded in raising nearly all the Orchids indigenous to Scandinavia, including Epipactis, no further recommendation is necessary.

"A mixture is made of one part peat, one of leaf mould, and one of fir-wood or pine, decomposed, but not too much crumbled, and to this is added a little dry moss broken into small pieces (Hypnum by preference), a little swampy peat broken up, and a very small quantity of pine-needles. A little of this mixture is pressed into the pots where seeds are to be sown, and in them are planted three or four living mosses (small species

by preference, such as Dicranium, Mnium, Bryum argenteum, etc.). Then the seeds are sown on and between these plants of moss, and the pots placed in a case or frame containing a little water, so that the earth in the pots becomes thoroughly moist. Whilst moisture is thus always ensured, at the same time the soil is prevented from becoming saturated. Then the case is put on a hot-bed of moderate temperature, with no ventilation for a fortnight, and with slight shade from the sun."

The method followed by the Count du Buysson is a very simple one, and is practically a reproduction of what occurs in a natural state. Its success may be taken for granted, though it would appear that the interest of watching the seedlings through their various stages of development is lost.

"The plan I have adopted," says he, "for managing these Orchids is very simple. Besides the tubers that I transplant just when their leaves begin to turn yellow (unfailing mark of their maturity), I moisten the stems bearing the capsules, and place them in my conservatory in pots full of sand, and so the seeds ripen. I scatter them over the lawn, removing the stem, among my clumps of trees, choosing as far as possible a soil and situation similar to the spots whence I gathered them."

In a little brochure published last year on this subject, entitled, *Unser heimischen Orchideen*, M. Alexandre Wurtenberger speaks of the seeds of Bavarian Orchids as follows:—

"Although the various genera of Orchids generally manifest different requirements with regard to the soil, all the species may be sown in the same composition; it may be in a mixture of one part leaf-mould, one of sand, and two of loam. Sowing must be done in early spring, in small, well-drained cases which are filled with this compost, properly proportioned and sifted. The earth is smoothed down with a small board, then covered all over with two inches of snow, and it is on this that the Orchid seed is sown. Then the cases are moved into a place where the snow melts rapidly, after which on the surface of the soil a light layer of chopped moss is spread, and a plate of glass put over the box. Finally, the seeds are placed on a hot-bed. At the end of some weeks the seedlings appear; the moss covering is then carefully raised and shade given. If the cold is to be maintained, and the seeds left to germinate, as it does in Nature, this takes a longer time. When the plants can be taken hold of with the tweezers, they must be pricked out into other boxes, and in a similar mixture of earth to the former, but with the addition now of a little lime.

"Then the growth and development of the seedlings is hastened by placing the pricking-out boxes on a hot-bed, and, at the end of some weeks, they can be transported into borders specially prepared to receive them. They must then be drawn from the box where they were pricked

out, care being taken to keep a little ball of earth round them, and to place them near enough to each other to afford mutual protection.

"The earth in which Orchids are planted should not be rich, and should contain as little organic matter as possible; if the soil of the garden is too light, good fresh earth must be added. In any case, it is important to be sure that the earth has received no dung or other manure, as Orchids much object to it. It is stated that Orchid plants thus raised from seed are much more healthy and succeed better than those which are transplanted from their natural habitats. Seed-sowing also affords an opportunity for obtaining new forms and varieties."

Judging by the differences in the methods adopted, success does not depend upon the carrying out of every minute detail here described, but upon an intelligent adoption of a few general principles, which shall secure to the young seedlings similar conditions to those under which they occur in Nature. And these are sufficiently varied. Some species are quite at home in an ordinary border, or wild garden, if other things are not allowed to crowd them out. Some grow in marshy spots, and too much drought is fatal to their well-being. Others absolutely refuse to grow unless lime is present in the soil. The abundance of some species in certain localities affords evidence that seeds germinate pretty freely where their natural wants are supplied, and we can only hope that these remarks will induce others to pay more attention to these delightful little plants. And now that our knowledge of hybridisation has progressed so far, the possibility of raising new and distinct forms should not be lost sight of, especially as several very distinct natural hybrids occur on the continent of Europe, and are not unrepresented in Britain. Here is assuredly a very promising field for experiments.

CALENDAR OF OPERATIONS FOR AUGUST.

By W. H. White, Burford, Dorking.

As long as the exceptional tropical weather continues there will be no necessity to use much artificial heat in either division. During the daytime the proper temperatures are easily maintained by sun-heat alone, but although the nights are very mild, it is not advisable to dispense with fire-heat altogether. By judiciously regulating the fires and keeping the pipes just warm in the hottest divisions, a freer circulation of air can be maintained than when none is used. At the same time it will counteract and help the plants to send off any superabundance of moisture that may have accumulated after sunset. Again, during the night, if the houses are too damp, just when the temperatures are lower than they should be, the plants

may receive a chill, and possibly many of the most valuable become spotted and irretrievably ruined. Therefore it is even better to use the smallest possible amount of fire-heat in the warmer houses at night than none at all. There are, of course, exceptional times when fire-heat must be discontinued, especially when any alterations or additions are made to the heating apparatus, when the atmosphere should be kept proportionately dryer, by damping down earlier in the afternoon, and using less water than usual. By closing up the house with sun-heat a fairly warm temperature can be maintained during the early hours of the night. Before finishing up, say at 10 p.m., put some top-ventilation on, to carry off any superfluous moisture.

It is now the best time of year to overhaul and put the heating apparatus in working order, so as to make sure that the maintenance of the proper temperatures can be obtained when required. A matter of considerable importance, when the weather is suitable, is to thoroughly cleanse out the pipes and boilers, making sure if possible that no accumulation of dirt or sediment remains at the bottom of the boiler. If this is neglected the probabilities are that the fire will burn through at the spot where the dirt has settled, causing the boiler to break down just when the weather is most severe. Examine and test all pipes, and if any of them are cracked, or if there be any loose or worn-out packing in the joints, these should be repaired at once. At the same time see that the valves and air-taps work easily.

A few of the deciduous Dendrobiums, as D. Wardianum, crassinode, aureum, &c., will now be finishing up this season's growth, and as soon as the terminal leaf is completed, gradually diminish the quantity of water at the root; but the plants should not be allowed to become too dry at this stage, or they will start again into growth, and fail to produce their full complement of flowers. Neither should they be removed from their growing quarters immediately growth is made, for it will be observed that many of the earlier roots are sending forth a quantity of lateral rootlets, which must be encouraged as far as possible, as much depends on them for the quality of the blooms. When these young rootlets have a firm hold of the compost it will be time to remove the plants to a cooler and drier atmosphere. It is not advisable to expose them to full sunshine at once, but the shading must be gradually reduced, by letting the blinds down an hour later in the morning, and pulling them up earlier than usual in the afternoon, until it can be dispensed with altogether. When fully exposed to the sun's rays, the leaves soon turn yellow, and, although unsightly, should not be cut off, but allowed to fall off naturally. Water must now be carefully given, as oftentimes the sphagnum on the surface appears to be quite dry while underneath it is the reverse. If the roots are kept in a constantly moist condition when the plants are at rest, they will prematurely decay; it is therefore safer to err on the dry than on the wet side. Once a week will be sufficient until the flower buds show, when more will be required. Give

plenty of air both top and bottom, taking care to avoid cold draughts. All other Dendrobiums that are now in full growth must have liberal treatment, both at the root and in the atmosphere.

Calanthes are now growing vigorously, and require an abundant supply of moisture at the root, but it must be given with discretion, or spot and disease will be the result. Where the pots have become full of roots alternate waterings with liquid cow-manure will be conducive to the formation of stout bulbs and strong flower spikes. Previous to using the manure strain it through a piece of fine muslin, so as to remove all particles of solid matter, which if not separated from the liquid would, after a few applications, stop up the pores of the compost. Do not apply the stimulant too strong at first; about one gallon to three of water will be sufficient for the first three or four waterings, but afterwards it may be increased to one half of each. As the young roots appear on the surface, place a thin layer of lumpy fibrous loam lightly over them, into which they will readily push their way, and grow fast, sending up splendid spikes in due season.

There are some Orchids which are far more difficult to cultivate than others, and among these may be classed such Mexican Lælias as L. autumnalis, albida, furfuracea, and Gouldiana. I may say that thousands of these plants have been imported, which after blooming for two or three seasons have become exhausted; in the majority of cases never to be brought round again to their former condition. To see established plants that have been satisfactorily grown, and produced good spikes for six or seven consecutive seasons is a rarity, but by careful watching and intelligent observations as to their requirements under our artificial treatment, the successful cultivation of these beautiful Lælias may no doubt be accomplished. Since the last flowering season, and up to the present time, our plants have been hanging close to the roof glass in a comparatively dry, cool, and well-aired house, where they have made large quantities of young roots; but now they are starting into growth they will be placed in the Mexican house. These plants require but little shading at any time, and delight in almost any amount of sun-heat, provided the house be well ventilated. When in full growth a constant supply of water at the root is necessary. By closing up the house early in the afternoon, and at the same time pulling up the blinds and well syringing the foliage, the plants will make stronger and larger bulbs than when grown in a close, shady atmosphere. At night, with the outside temperature at 50°, the top and bottom ventilators may be partially opened and left so until the morning, when they should be opened wider.

Lælia majalis is another beautiful Mexican species that is usually difficult to manage. Block treatment seems to suit this plant better than either pot or basket. Coming as it does from a very high elevation, it does not require so much heat as the preceding, but it must have all the sunlight possible.

The species of Barkeria, as B. elegans, Lindleyana, Skinneri, and cyclotella, are well worthy of attention, their pretty spikes presenting a gay appearance during the dull season. They thrive best when fastened to teak rafts, upon which is placed some living sphagnum moss, and suspended close to the roof of the intermediate house, where they will get plenty of light but not actual sunshine. Barkerias, like many other Orchids, are very sensible as to their likes and dislikes, and when once the cultivator has found the place that suits them, he had better let them remain there.

Now that plants of Miltonia vexillaria have commenced to grow, they may be repotted, but before this operation is commenced the grower should make quite sure that they are perfectly free from insects, by well washing the growths in some safe insecticide, and afterwards cleansing them in clear soft water. As these plants form numerous fibrous roots, which love to push their way in and out on the surface of the compost, they require a larger space to ramble in than is afforded to the majority of Orchids. Therefore use rather large, well-drained pots, placing the plants into a shallow compost of clean sphagnum moss, with a little fibrous peat and a fair sprinkling of small broken crocks. After repotting, water the plants very sparingly, using a fine rose watering-can for the purpose, and giving just enough to entice the sphagnum to grow. As the roots lengthen and lay hold of the sides of the pot, a more liberal supply of moisture will be necessary. The temperature of the cool house where they will get plenty of fresh air will be the most suitable place for them, until the nights commence to get chilly, when they should be removed to their former growing quarters in the intermediate house.

Few groups of plants produce flowers of such brilliancy and variation in colour as Masdevallias, and why they are not more generally cultivated I am at a loss to understand. The majority of Masdevallias are amongst the most easily cultivated of all Orchids, and where a fairly representative collection is grown, and well managed, there are always some species in flower throughout the year. Such showy and gorgeous varieties as M. Veitchiana, M. ignea, M. coccinea and its many distinct varieties of the Harryana type, produce a splendid effect when intermixed with the charming spikes of Odontoglossum crispum. The dwarfer species, as M. caudata Shuttleworthii, Arminii, hieroglyphica, Estradæ, ludibunda, Wageneriana, and the handsome garden hybrids M. × Courtauldiana and M. × Geleniana, all form pretty objects when covered with their elegant flowers. Another dwarf growing species which deserves to be mentioned is the extraordinary M. muscosa, which is quite distinct from all others, especially in the sensitive lip, which suddenly closes up on the slightest touch. A full account of the curious mechanism by which this is effected may be found in Messrs. Veitch's *Manual of Orchidaceous Plants* (part v. p. 55). Some Masdevallias are grown principally for the singularity and quaintness of their flowers, as M.

coriacea, M. maculata, M. ephippium, M. peristeria, M. elephanticeps, &c., all of which prove a source of great interest to the botanist and lover of curiosities; while others of the small-flowered and less showy section, as M. gemmata, M. Wendlandiana, M. melanopus, M. tridactylites, and M. porcelliceps, are all very pretty, and equally interesting from a botanical point of view. These latter, with the dwarf-growing species, should be placed in small hanging-pans, with their leaves well up to the light, and must on no account ever be allowed to get dry at the root.

The best months for repotting these plants are about the end of August or February. Masdevallias are vigorous rooting plants, and accordingly require pots of sufficient size for the development of their roots. The pots should be two-thirds full of drainage, using as a compost peat and moss in equal proportions, with a sprinkling of broken crocks. In potting, keep the base of the plants about on a level with the rim of the pots, and pot moderately firm, but not so hard as to prevent the water rushing rapidly through the compost. The critical time with these plants is just after potting, and before the roots have a firm hold. At this time it is an easy matter to over-water them, thereby causing the loss of many leaves. At first, water very sparingly, but when thoroughly re-established, never allow the plants to become dry at the roots. Where it is possible to have a structure especially devoted to these cool-growing plants, I would recommend a lean-to house facing east or north-east, where a cool and humid atmosphere can be maintained during the hottest weather, for Masdevallias, like the New Granadan Odontoglossums, are often injured and stunted in growth by our hot dry summers.

At this time of the year, by carefully regulating the shading and ventilation, and damping down two or three times a day, the temperature of the house may be kept a few degrees below that of the external air.

ORCHID PORTRAITS.

GARDENERS' CHRONICLE.

GRAMMATOPHYLLUM SANDERIANUM. This is nothing but Grammatophyllum speciosum; a sketch of the monster plant introduced by Messrs. F. Sander and Co., of St. Albans, and presented by them to Kew, where it may now be seen in the Victoria-house.—July 1st, p. 15; also woodcut on p. viii. of index to previous volume.

LUISIA AMESIANA, Rolfe. An interesting species, introduced from Burmah by Messrs. H. Low and Co., of Clapton, with Vanda Kimballiana, and afterwards by Messrs. F. Sander and Co., of St. Albans, with both of whom it has flowered. A plant was exhibited by Sir Trevor Lawrence.

Bart., at the last Temple Show, and received a Botanical Certificate. This is incorrectly said to be the first to flower in England.—July 8th, p. 32, fig. 8.

LUISIA VOLUCRIS, Lindl. A very peculiar plant, whose lip is appressed to the stem of the plant, so that an insect crawling up the stem might easily find its way to the flower, and thus carry off the pollen. The lip is deep purple-brown, and the sepals and petals very pale green. It also received a Botanical Certificate, together with the preceding.—July 8th, p. 32, fig. 9.

LUISIA PSYCHE, Rchb. f. Another Luisia, perhaps the prettiest in the genus, whose flowers look like some curious insect on the wing.—July 8th, pp. 32, 34, fig. 11.

CYPRIPEDIUM × CLINKABERRYANUM, O'Brien. (See p. 246 of our present issue.)—July 15th, p. 86, fig. 18.

GARDENERS' MAGAZINE.

STANHOPEA AMESIANA. Evidently only a variety of Stanhopea Lowii (*supra*, June, p. 177, fig. 12). The flowers are said to be waxy white, with the faintest tinge of pink on the petals.—June 24th, p. 352, with figure.

GARDENING WORLD.

EULOPHIELLA ELISABETHÆ, L. Lind. and Rolfe.—July 8th, pp. 708, 709, with fig.

JOURNAL DES ORCHIDÉES.

LÆLIA PURPURATA VAR. FASTUOSA. A handsome dark variety, with rose-coloured sepals and petals, the latter flamed with a darker shade —June 15th, pp. 102, 103, fig. 57.

LÆLIA PURPURATA VAR. MAJESTICA. A handsome white variety, with the front lobe of the lip striped with rosy violet, and suffused with the same shade in the throat.—June 15th, pp. 104, 105, fig. 58.

JOURNAL OF HORTICULTURE

CYPRIPEDIUM × CHARLES RICHMAN. A hybrid raised in the collection of C. Richman, Esq., Springfield, Trowbridge, between Cypripedium bellatulum and C. barbatum. It received an Award of Merit from the Royal Horticultural Society on May 9th last.—June 29th, p 517, fig. 92.

CYPRIPEDIUM VOLONTEANUM GIGANTEUM.—July 13th, p. 27, fig. 4.

LINDENIA.

MAXILLARIA CALLICHROMA, Rchb. f. An interesting species, discovered long ago by Wagener in Venezuela, at 6,000 feet elevation. It is nearly

allied to the well-known M. luteo-alba, Lindl., though smaller in all its parts.—t. 376.

BRASSIA BICOLOR, Rolfe. A Peruvian species, allied to B. cryptophthalma, Rchb. f., from the same country. It was introduced by Messrs. Linden, of Brussels, with whom it recently flowered. The flowers are light yellowish green, the lower halves of the sepals and petals and base of the lip spotted and suffused with brown.—t. 377.

LYCASTE SKINNERI, Lindl., VAR. PURPUREA, Hort. A very handsome variety, with pale rose-coloured sepals, much darker, crimson-spotted petals and a white lip, with a few spots on the side lobes.—t. 378.

ANGRÆCUM ARTICULATUM, Rchb. f. A graceful species, from Madagascar, much like a smaller edition of the well-known A. Ellisii, Rchb. f.—t. 379.

ORCHIDOPHILE.

CYPRIPEDIUM CAUDATUM, Lindl., VAR. LINDENI, N. E. Br.—March, p. 80, with plate.

DENDROBIUM × CASSIOPE, Rolfe.—April, pp. 105, 106, with fig.

REICHENBACHIA.

Part IV. of Volume II. of the second series contains:—

DENDROBIUM JOHNSONIÆ, F. Muell. A rare and beautiful New Guinea species, known in gardens as D. Macfarlanei, Rchb. f., though the former is its correct name. The large flowers are white, the side lobes of the lip striped with rosy purple and the crest yellow.—p. 27, t. 61.

LÆLIO-CATTLEYA × BEHRENSIANA, Hort. A handsome hybrid, derived from Lælio-cattleya × Schilleriana ♀ and Cattleya Loddigesii ♂. The flowers are light blush, with the front lobe of the lip amethyst-purple.—p. 29, t. 62.

CALANTHE × VICTORIA-REGINA, Hort. A handsome hybrid, with blush pink flowers and a trace of lemon-yellow in the throat of the lip.—p. 31, t. 63, fig. 1.

CALANTHE × BELLA, Rchb. f. Flowers light whitish rose, with a very deep maroon blotch on the lip.—p. 31, t. 63, fig. 2.

CALANTHE × BURFORDIENSE, Hort. Flowers intense rosy carmine, the lip a little paler, with a dark blotch in the throat.—p. 31, t. 63, fig. 3.

CATTLEYA MENDELI, QUORNDON HOUSE VARIETY. A very fine white variety, the sepals and petals with a faint blush suffusion, the lip with a few faint reddish lines on the disc, and a little lemon-yellow on the sides of the throat. It appeared in the collection of W. E. Farnham, Esq., of Quorndon House, Loughborough, and at the sale of that collection was purchased by G. Hardy, Esq., of Timperley, for 220 guineas.—p. 33, t. 64

REVUE HORTICOLE.

VANDA TRICOLOR, Lindl., VAR. WALLICHII, André. Said to be a plant mentioned by Lindley in his *Genera and Species of Orchidaceous Plants*, as among the Indian plants of the great botanical collector, Wallich. But there is no such plant in the work named, nor in the later *Folia Orchidacea*, where Lindley gave an account of Vanda tricolor. Further, the species is only known from Java.—July 16th, p. 328, with plate.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

IT cannot be said that the display of Orchids at the Society's Gardens, Chiswick, on July 11th, was equal to any which has been seen at the Drill Hall, Westminster, during the year. The powers of the Orchid Committee on this occasion were not severely taxed, only two "Award of Merit" Certificates being granted. One of these went to Messrs. F. Sander and Co., St. Albans, for Cypripedium × Massaianum (C. × superciliare ♀ × C. Rothschildianum ♂), a hybrid with marbled leaves and a large flower, the whitish upper sepal of which was striped with dark purple, the broad ciliate petals being white tinged with green and spotted with deep crimson, while the lip was shaded with pale rose. From the same establishment came the pale cream and crimson Aërides Picotianum; the chaste Burlingtonia pubescens; the round-leaved Trichocentrum tigrinum, with large white lip and purple-blotched sepals and petals; Renanthera matutina, &c.

The second Award of Merit was given to Cypripedium Stonei var. Cannaertianum, exhibited by Thos. Statter, Esq., F.R.H.S., Whitefield, Manchester (gr. Mr. R. Johnson). This is a remarkable plant, with a large white and crimson upper sepal, and broad yellowish petals dotted down the centre with a line of crimson, and washed with brownish crimson at the tips. Mr. Statter also exhibited the orange-scarlet Lælia monophylla, and cut blooms of Lælio-cattleya × Amesiana and Cattleya × Brymeriana.

W. C. Clark, Esq., Sefton Park, Liverpool (gr. Mr. Jones), sent a three-flowered spike of the beautiful Cattleya Rex.

Messrs. W. L. Lewis and Co., Chaseside, Southgate, exhibited Cypripedium × Bradshawianum, which seems to be the result of a cross between C. Lawrenceanum and C. Spicerianum, and very much resembles C. × radiosum—which it probably is.

Messrs. Hugh Low and Co., Clapton, as usual, contributed a pretty group, in which were Aërides I'Ansoni, Epidendrum nemorale, Angræcum articulatum, Vanda Kimballiana, the ivory-white Stanhopea Amesiana, Oncidium Lanceanum, and several Cattleyas.

Messrs. B. S. Williams and Son, Upper Holloway, among a group of stove and greenhouse plants, exhibited a fine Lælia Digbyana and several Cattleyas, which, from their surroundings, were rendered conspicuous.

CORRESPONDENCE, &c.

Mr. W. Holmes, gr. to G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, sends a superb inflorescence of Lælio-cattleya × elegans Turneri and Cattleya × calummata, the latter a rare and very beautiful hybrid raised by M. Bleu, of Paris, from C. intermedia and C. Aclandiæ. The Odontoglossum enclosed for determination is O. auriculatum, Rolfe.

A two-flowered scape of Lycaste Deppei has appeared in the collection of Alex. Hodgkinson, Esq., The Grange, Wilmslow, Cheshire. This is very unusual, and we had not before met with a similar instance. Mr. Hodgkinson also encloses a photograph of an imported plant of Dendrobium Falconeri, with 158 flowers, most of them over three inches across, and very richly coloured. It is certainly a very handsome specimen.

Mr. A. Van Imschoot, of Mont-St.-Amand, Ghent, sends several very interesting Orchids, particularly Vanda alpina, a Himalayan species allied to V. cristata, and very rare in cultivation. Trichopilia albida, T. Wageneri, Lycaste leucantha, Brassia maculata, and others are also included.

Odontoglossum Galeottianum comes for determination from Mr. C. Clarke, Riverside Cottage, Brandon, Suffolk. It is rather curious that this plant almost invariably comes with O. Cervantesii. A note about it will be found at p. 215.

Messrs. Pitcher and Manda send a flower of "Sobralia macrantha Princess May, which they imported with S. xantholeuca. It is a little faded, but the flower appears to be white with a faint flush of pink, and the disc of the lip lemon-yellow. But is it not a variety of S. xantholeuca, not of S. macrantha?

Epidendrum campylostalix, Rchb. f., comes for determination from Mr. W. B. Latham, Curator, Edgbaston Botanical Gardens, Birmingham. It is a very rare species, from Costa Rica and Guatemala.

Cycnoches Rossianum, Rolfe, has again flowered in the collection of H. J. Ross, Esq., Florence, Italy. A raceme to hand measures over a yard long, and bears twenty-one flowers. The appearance is very curious, and is not inaptly compared to a lot of monkeys climbing up a rope. The Brassia enclosed for determination is B. brachiata, Lindl.

W. L. Lewis and Co., Southgate.—We fail to recognise the Eria sent.

Cattleya Mendeli La Vierge is a very striking variety of Cattleya Mendeli which has just flowered in the collection of H. Little, Esq., of Baronshalt, East Twickenham. It is characterised by the total absence of any yellow on the disc of the lip, that colour being replaced by white. The front lobe is rosy purple. Another plant shows the opposite extreme, in having the disc deep orange yellow, almost like Cattleya Eldorado. It is, however, only a variety of C. Mendeli, approaching one called C. Kimballiana, which we believe is only a variety of C. Mendeli.

A fine form of Cypripedium tonsum is now flowering in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire, as we learn from him. The flower measures five and a half inches from tip to tip of the petals, and four and three-quarter inches from the tip of the dorsal sepal to the apex of the lip. Mr. Wrigley states that it is growing in nothing but fibrous peat and crocks, as are all his Cypripedia.

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VOL. I.] SEPTEMBER, 1893. [No. 9.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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THE ORCHID REVIEW.

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NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Victoria Street, Westminster, during September, on the 12th and 26th respectively, when the Orchid Committee will meet at 12 noon. The usual Certificates are offered.

Another decade of New Orchids described by Mr. Rolfe appeared in the July number of the *Kew Bulletin*, which was issued late in the month. These are noticed on a later page.

The first part of the volume of *Martius' Flora Brasiliensis* devoted to Orchids has appeared; also the commencement of a work devoted to figures of South African Orchids, by Mr. Bolus. Both are reviewed elsewhere.

An additional species of Coryanthes has now flowered in cultivation, making the fourth addition to the genus in less than that number of years. It is the remarkable C. Wolfii, a native of Ecuador, and Mr. F. W. Moore. of the Royal Botanic Gardens, Glasnevin, has apparently the honour of flowering it first in Europe.

Information with regard to the remarkable genus Catasetum is slowly accumulating, as the female flowers of C. maculatum have now appeared at Kew. It is fortunate that these plants have lately received more attention. Their sportive character is now well known, and we hope that any of our readers who may flower both sexes on the same plant, or female flowers only, will let us see them.

A female of Cycnoches pentadactylon has also appeared in the same collection, where males only have been produced on former occasions. Its history and a figure are given on pages 73 and 162. This genus is also deserving of more attention. It is strange that no one has re-introduced the beautiful C. aureum, from Chiriqui. Now that their cultivation is better understood, this should be attempted.

STANHOPEA INODORA AND S. GRAVEOLENS.

Stanhopeas are not exactly popular garden plants, though many of the species are scattered about in various collections. Their flowers are both large and handsome, though rather too fleeting. Stanhopea inodora was described and figured by Lindley nearly fifty years ago, but that author did not preserve a flower, and the species was soon lost sight of. Even Reichenbach never appears to have known it, for what he describes and figures under this name is S. graveolens, Lindl. The true plant has, however, again appeared in cultivation, in the collection of W. C. Walker, Esq., Percy Lodge, Winchmore Hill, whose gardener, Mr. G. Cragg, states that it was received from Mexico. This circumstance affords an opportunity to point out the confusion into which it has fallen. It was originally imported from Mexico by Messrs. Loddiges, of Hackney, with whom it flowered in June, 1843. The sepals and petals are of the lightest whitish yellow, and the lip ivory white, with the lower half of the hypochil yellow, and a more or less clearly defined purple-brown blotch on either side.

S. graveolens was described in 1840, from a plant which flowered in the collection of the Hon. and Rev. W. Herbert, said to have been purchased from Mr. Tate, who imported it from Peru. In later accounts the habitat is given as "Guatemala?" though without any explanation for the change. Lietz, however, has since collected it in Brazil, from which it seems probable that it is a native of the adjacent parts of Peru and Brazil. In colour it generally bears a close resemblance to S. inodora, though some forms are more yellow; but it is always very easily distinguished by the presence of a large sac underneath the hypochil, as in S. Devoniana, Lindl. The flowers are also powerfully fragrant, while in S. inodora I find them as Lindley stated, practically scentless.

Here is the amended synonymy of the two species:—

1. Stanhopea inodora, Lodd., ex. *Lindl. Bot. Reg.*, xxi. t. 65; *id. Fol. Orch. Stanhop.*, p. 2. **Native of Mexico.**

2. Stanhopea graveolens, *Lindl. Bot. Reg.*, xxvi., *Misc.*, p. 59; *id.*, xxxi., sub. t. 65; *id. Fol. Orch. Stanhop.*, p. 4; *Fl. d. Serres*, tt. 69, 70, *Gartenflora*, xl., p. 201, t. 1345 (var. Lietzei, Regel). S. inodora, *Rchb. f. Xen. Orch.*, ii. p. 157, t. 165 (*non* Lindl.).

R. A. R.

HISTORY OF ORCHID HYBRIDISATION.

PART VIII.

(*Continued from page* 229.)

SEVERAL other hybrids appeared in 1888, which may now be briefly noted:—

From the establishment of Messrs. James Veitch and Sons, of Chelsea:—

Cattleya × Cassandra, derived from Cattleya Loddigesii ♀ and Lælio-cattleya × elegans ♂. It has since been referred to Lælio-cattleya.

Lælia × Euterpe, an elegant little hybrid derived from Lælia pumila Dayana ♀ and L. crispa ♂.

Cypripedium × Galatea, C. × Electra, and C. × Orestes are three seedlings whose parentage is a little doubtful, but they are thought to have been escapes from the pot in which the seed of C. × œnanthum was sown, and therefore only varieties of that hybrid.

From the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne:—

Cypripedium × Godseffianum, a very handsome hybrid derived from C. Boxallii ♀ and C. hirsutissimum ♂.

Selenipedium × nitidissimum, another handsome hybrid, derived from S. caudatum var. Warscewiczii and S. × conchiferum. It is not stated which was the seed parent.

From the collection of D. O. Drewett, Esq., Riding Mill-on-Tyne:—

Cypripedium × caligare, derived from C. venustum ♀ and C. Dayanum ♂, and said to have almost the leaf of the mother plant and the flower of the pollen parent.

Cypripedium × pavoninum, derived from C. Boxallii ♀ and C. venustum ♂.

From the establishment of Messrs. F. Sander and Co., of St. Albans:—

Cypripedium × Berggrenianum, derived from C. insigne and C. × Dauthieri, the latter believed to have been the pollen parent.

From the collection of Dr. Harris, of Lamberhurst, Kent:—

Cypripedium × Atys, parentage lost, but probably derived from C. venustum and C. Hookeræ.

From the establishment of Mr. B. S. Williams, of Upper Holloway:—

Cypripedium × Fitchianum, parentage doubtful, but probably derived from C. villosum and C. venustum, and thus a variety of C. × Williamsianum.

From the collection of Sir Trevor Lawrence, Bart., Burford, Dorking:—

Cypripedium × burfordiense, parentage doubtful, but supposed to have been derived from C. Argus and C. philippinense.

Lastly may be mentioned the very pretty little Cypripedium Vanhoutteanum, supposed to have originated in the establishment of M. Louis

Van Houtte, of Ghent, and, from its characters, probably derived from C. niveum and C. × Dauthieri.

It was not until 1889 that the first artificial hybrid Miltonia flowered. Various experiments had been made with this and the allied genus Odontoglossum, and young seedlings had been raised, though none of them had survived until reaching the flowering stage. It was M. Alfred Bleu, of Paris, who first attained success, when Miltonia × Bleuana flowered for the first time, in January, 1889. Its parents were Miltonia vexillaria ♀ and M. Roezlii ♂, both of which were formerly referred to Odontoglossum. The cross was effected in June, 1883, and the seed was sown in the following April, as soon as the capsule matured. It is a very beautiful hybrid. The vegetative organs closely resemble those of the mother plant, while in the flower the characters of the pollen parent as strongly preponderate. Several seedlings were raised, and these present some differences between themselves, one having a large yellow blotch at the base of the lip, and another some radiating light brown lines. All of them, however, closely resemble M. Roezlii in colour. About two years later the same hybrid was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea.

Another very remarkable hybrid which flowered for the first time in 188[illegible] was the beautiful Lælio-cattleya × Digbyano-Mossiæ, raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Cattleya Mossiæ fertilised with the pollen of Lælia Digbyana. It was exhibited at a meeting of the Royal Horticultural Society on May 14th, and received an Award of Merit. In colour it approaches the Cattleya parent, but the lip is beautifully fringed—a character derived from the pollen parent, which it also approaches in its very long ovary. This hybrid is probably the forerunner of a race with fringed flowers. Lælia Digbyana is a rare species, but should now be much sought after by the hybridist, on account of its deeply fringed lip—a character not met with in any other species of the genus.

The first hybrid Cymbidium also flowered in 1889. It too was raised in the Royal Exotic Nursery, from C. Lowianum ♀ and C. eburneum ♂, and received the name of C. × eburneo-Lowianum. It received a First-class Certificate from the Royal Horticultural Society on March 12th. It combines well the characters of the two parent species, and is certainly a very promising acquisition.

Cattleya × Ballantiniana was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from C. Trianæ fertilised with the pollen of C. Warscewiczii (C. gigas), and was named in honour of Mr. H. Ballantine, gardener to Baron Schröder, of The Dell, Egham. It is a handsome form, combining well the characters of its two parents.

Three other very interesting hybrids between Cattleya and Lælia also flowered in Messrs. Veitch's establishment during 1889.

The first was Lælio-cattleya × Stella, raised from Lælia crispa ♀ and the plant called Lælia × elegans var. Wolstenholmiæ ♂, which is really a variety of Lælio-cattleya × Schilleriana. Thus it has only one-fourth Cattleya blood in it. The seed was sown in 1881.

Lælio-cattleya × Aurora was raised from Lælia pumila Dayana crossed with the pollen of Cattleya Loddigesii. It flowered for the first time when seven years old. It has the dwarf habit of the mother plant, with larger flowers, which show more of the influence of the pollen parent, especially in colour. It is a very elegant little hybrid.

Lælio-cattleya × Cassiope is another charming little plant, obtained by crossing Lælia pumila with the pollen of Lælio-cattleya × exoniensis. The seed was sown in 1881, so that the plant was eight years old when it flowered. It has the general habit of the mother plant, with the flower, especially as regards colour, modified in the direction of the other parent.

Masdevallias were also well to the fore during 1889, as several novelties were described, and one hybrid, though not new, proved of even greater interest, as it cleared up the hybrid origin of two wild plants, which had been suspected from the outset. This one may be considered first.

In 1878 Reichenbach described Masdevallia splendida, as a "new species," though with the remark that it "makes one think of a mule between Masdevallia Veitchiana and M. Barlæana or amabilis"; and about a year later he added M. Parlatoreana, as a "new species (or new hybrid?)" He then stated—"We may now guess that it is perhaps a hybrid between Masdevallia Veitchiana and Barlæana, and M. splendida (misspelt 'spectabilis') between Veitchiana and amabilis." In order to prove this, Mr. Seden fertilised M. Veitchiana with the pollen of M. Barlæana, and the seedlings on flowering proved identical with the wild hybrids.

Both M. × splendida and M. × Parlatoreana appeared in a consignment of M. Veitchiana and M. Barlæana, which grow intermixed on the eastern Cordillera of Peru, near Cuzco, and the two hybrids described are certainly only forms of one. M. amabilis is out of the question. Firstly, it does not grow with M. Veitchiana, and secondly, these two species produced M. × Chelsoni, a quite distinct hybrid.

Masdevallia × Courtauldiana is a very pretty hybrid raised in the collection of N. C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from M. rosea and M. caudata (M. Shuttleworthii), but it is not stated which was the seed parent. The flower is fairly intermediate in character, in colour inclining towards M. rosea, but in shape nearer the other parent.

Masdevallia × Chelsoni splendens was raised by Mr. Seden from M. Veitchiana crossed with the pollen of M. amabilis. It is an improved form of M. × Chelsoni, which has the reversed parentage.

Masdevallia caudato-Estradæ was also raised by Mr. Seden, from M. Estradæ ♀ and M. caudata ♂. It is a very pretty little hybrid, and very

floriferous, for the seed was not sown until 1885, and four years afterwar one of the plants produced as many as eleven flowers.

Masdevallia × Ellisiana is a brilliantly-coloured hybrid derived from M. coccinea var. Harryana ♀ and M. ignea ♂, and thus the reversed cross o M. × Fraseri, of which it must be considered a variety.

Dendrobium × Wardiano-aureum is a very pretty hybrid raised by Mr. Seden from D. aureum ♀ and D. Wardianum ♂, which well combine the characters of its two parents. The same cross was afterwards raise in the collection of C. Winn, Esq., Selly Hill, Birmingham, as see our Ma issue, p. 137, fig. 9.

A Selenipedium flowered in 1889, and was described under the name o Cypripedium × robustius, but can hardly be said to represent a new cross. It was raised from S. × Sedeni ♀ and S. longifolium ♂, and thus has the reversed parentage of S. × Ainsworthii var. calurum. It was raised by Mr. F. Horn, in the collection of Baron Nathaniel de Rothschild, of Hohe Warte, near Vienna.

The remaining hybrids of the year were all Cypripediums, and three o them were the work of two new operators.

Cypripedium × claptonense was the first hybrid raised in the establishment of Messrs. Hugh Low and Co., of Clapton. C. × Harrisianum is said to have been one parent, and probably C. villosum the other, though it may possibly have been C. insigne.

Cypripedium × De Witt Smith was Messrs. Low's second hybrid, and was derived from C. Spicerianum ♀ and C. Lowii ♂. It is a bright and attractive little plant.

Cypripedium × Fraseri was raised by Mr. Fraser, of Derncleuch, from C. hirsutissimum and C. barbatum, and thus must rank as a variety o C. × porphyrochlamys (see pp. 101, 105, fig. 7), probably from the reverse cross.

Cypripedium × Aphrodite is a very distinct and pretty little hybrid raised from C. niveum ♀ and C. Lawrenceanum ♂, by Mr. Seden. It mos resembles C. niveum, though modified in the direction of the other parent.

Cypripedium × T. B. Haywood is another handsome hybrid, raised by Mr. Seden. Its parents were C. superbiens ♀ and C. Drurii ♂, between which it is quite intermediate in character.

Cypripedium × Euryale was also raised in the Royal Exotic Nursery by Mr. Seden, from C. Lawrenceanum ♀ and C. superbiens, and thus must be considered a variety of C. × Vervaetianum (see p. 228).

Cypripedium × Pitcherianum is a large and handsome hybrid raised in the collection of N. C. Cookson, Esq., Oakwood, Wylam-on-Tyne, from C. × Harrisianum superbum and C. Spicerianum, but it is not stated which was the seed parent. It would appear to be a variety of C. × Savageanum.

Cypripedium × Cassiope was raised in the establishment of Messrs. Seeger and Tropp, of East Dulwich, from C. venustum ♀ and C. Hookeræ ♂, and thus must be considered a variety of C. × Atys.

Cypripedium × Figaro was also raised by Messrs. Seeger and Tropp, and is believed to have been derived from C. Spicerianum ♀ and C. œnanthum superbum ♂, though the cross is said not to have been certainly recorded.

Cypripedium × venusto-Spicerianum was raised in the collection of D. O. Drewett, Esq., of Riding Mill-on-Tyne, by Mr. Keeling, from C. venustum ♀ and C. Spicerianum ♂, and thus is a variety of C. × polystigmaticum. The name given would suggest that C. venustum was the pollen parent, which, however, was not the case.

Cypripedium × Beatrice was raised in the same collection as the preceding. Its parents were C. Boxallii ♀ and C. Lowii ♂.

Cypripedium × Minerva, which completes our record for the year, was raised in the collection of R. H. Measures, Esq., of The Woodlands, Streatham. Its parents were C. venustum ♀ and C. × Harrisianum elegans ♂.

(To be continued.)

CATTLEYA MOSSIÆ HARDYANA.

This remarkable variety appeared in the collection of G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, and is characterised by its lilac-purple sepals and petals being streaked and variegated with deep magenta-purple, and the front lobe of the lip having an irregular deep purple blotch in the centre, some radiating streaks on either side, and some irregular deep yellow streaks and bands on either side of the throat. A somewhat similar form has flowered in the collection of the Right Hon. J. Chamberlain, M.P., at Highbury, Moor Green, Birmingham. It has similarly variegated sepals and petals, but the streaks in the latter are chiefly arranged along the centre, and the lip is not irregularly variegated in the same manner. Thus it is not identical with the original form, though coming near it, and, if we assign to the variety Hardyana the character of having irregularly variegated segments, may perhaps come under the same name. Some acknowledged varieties are really individuals, unless a certain amount of latitude is allowed. In any case both are very handsome forms.

Cattleya Mossiæ var. Hardyana. Williams and T. Moore in *Orchid Album*, iii. t. 125.

CORYANTHES WOLFII.

It is with great pleasure that we record the flowering, in July last, of this remarkable plant, we believe for the first time in Europe, in the Royal Botanic Gardens, Glasnevin, under the care of Mr. F. W. Moore, A.L.S. So far as we can ascertain, it has never been described, though Lehmann has published a note about it in the *Gardeners' Chronicle*, as the first member of a new section of the genus, with stiff, upright flower-spikes. Mr. Lehmann writes :—

Coryanthes Wolfii was named by me in honour of Professor Dr. Wolf, formerly of Guayaquil, now of Dresden. In his house I had the pleasure of seeing, examining, and sketching the first flowers of this marvellous plant, although it was known to me many years previously as an Ecuadorean species. It grows very sparingly, mostly on cacao trees, all over the littoral districts of the Guayas, where it flowers in February and March, when these level lands are mostly inundated. During this season it is beyond the power of man to penetrate the woods there—a circumstance that accounts for the plant not having been seen before. It produces thick upright flower-spikes 40 to 50 cm. high, with three to six large, wonderfully-constructed flowers, which are yellow, mottled, and stained with brownish red.

There are but few plants in the entire vegetable kingdom which are more interesting, and which afford such a varied amount of material for the student of vegetable physiology. Everything relating to Coryanthes is curious, and arrests the attention of the observer, even its spontaneous mode of growth. Whenever a large mass is found in the tropical forests of South America, numerous ants surround its root-masses. This ant is a small species of Myrmica, possessed of a strong aromatic smell, and which bites very severely, so that it requires some courage to meddle with the plant. These ants seems to be indispensable to the well-being of the plant ; for if these animals do not collect around the roots, it appears not to do well. Even in a cultivated state, as well as in the house of my friend, Dr. Wolf, at Guayaquil, as in my own country residence, I have observed the same facts. But nothing surpasses the flowers. The very peculiar organisation of the whole flower, the position each organ assumes in relation to another, the secretion of a sweetish fluid always retained in great quantity in the bucket—all is highly interesting, and invites both to study and investigation.

Mr. Lehmann stated that a few living plants had been sent to the Liverpool Horticultural Company, and it is probably one of these which Mr. Moore has acquired. The species is certainly very remarkable, especially for its flat, or slightly concave, perfectly solid hood, in which respect it comes next to C. elegantium, Lind. and Rchb. f., which also has an erect scape, which M. Lehmann has evidently overlooked. In every other species the hood is helmet-shaped, and hollow underneath, as is Lehmann's second species, C. Mastersiana, so that C. elegantium would appear to be a nearer ally of C. Wolfii. The colour is as stated by Lehmann. The horns at the base of the column are proportionately large, being 5 lines long, while the hood is only 9 lines broad. The flower is rather smaller than any previously known. It is to be hoped that it will prove amenable to cultivation, in spite of the absence of ants. It should be treated like a Stanhopea.

Coryanthes Wolfii, Lehm. in *Gard. Chron.*, 1891, ii., p. 483.

NOVELTIES.

MASDEVALLIA BURBIDGEANA, Rolfe.—This is a pretty little species of the section Saccolabiatæ, which almost combines the shape of M. erythrochæte with the colours of M. Chestertoni, though, of course, it is quite distinct from both. The perianth is greenish yellow, irregularly spotted and marbled with deep brownish maroon, with many yellowish white hairs. The lip is light buff, inclining to yellow inside, but oblong and saccate, not expanded as in M. Chestertoni, whose colour it has. The plant has flowered in the Glasnevin Botanic Gardens on two recent occasions, under the care of Mr. F. W. Moore, A.L.S., having been obtained from Messrs. F. Sander and Co., of St. Albans. It is probably a native of New Granada. It is dedicated to Mr. F. W. Burbidge, M.A., Curator of the Trinity College Garden, Dublin :—

Leaf oblong, acute, attenuate below, 5 in. long, ¾ in. wide. Perianth tube open, 4 lin. long; dorsal sepal ovate-triangular, 9 lin. long, 6 lin. broad; lateral ones a little larger and united for about 5 lines beyond the tube; tails 1¾ in. long. Petals 1½ lin. long, white, with a longish maroon blotch on the unguis, stained with yellow at the tip. Lip oblong, saccate, 5 lin. long, with three central parallel keels, and numerous lateral ones radiating to the margin.

LÆLIA LUCASIANA, Rolfe.—This distinct and pretty little Lælia has flowered in two collections. First in that of Sir Trevor Lawrence, Bart., Burford, Dorking, in 1892, and recently with C. J. Lucas, Esq., Warnham Court, Horsham. As regards the latter, Mr. Duncan, the gardener, states that a plant was purchased last year at Stevens' Rooms, and was supposed to be new. It is added to L. crispilabia, A. Rich. (sometimes called L. Lawrenceana in gardens), but is easily distinguished by its yellow lip, which contrasts well with the mauve-purple sepals and petals. At present it is rather imperfectly known :—

Scape few-flowered. Sepals and petals spreading, linear-oblong, subobtuse, 12–14 lines long, 3 lines broad, light-mauve purple. Lip 3–lobed; side lobes convolute, broadly oblong, subobtuse, 7 lines long, 3 lines broad; front lobe reflexed, obovate-elliptical, obtuse, very undulate, 4 lines broad, deep yellow, with the front half primrose. the lower part of the disc and side lobes deeply stained with maroon. Column 3 lines long, light green, its face stained with dull purple-brown.

MAXILLARIA STRIATA, Rolfe.—The genus Maxillaria is a very extensive one, though the majority of the species find but little favour in gardens. There are, however, a few exceptions, principally among the large-flowered species, and as these have the merit of being easily grown and very floriferous, it is a wonder that they are not more generally cultivated. The present species is one of these large-flowered kinds, which, judging by dried specimens and a coloured drawing, should find favour among amateurs who

include the Maxillarias in their collections. The flowers equal those of M. venusta, Lindl., and are very similar in shape and size, but quite different in colour, being closely striped with red on a light ground, that of the sepals and petals yellow and of the lip white. It is a native of Peru, and was introduced to cultivation by Messrs. Linden, L'Horticulture Internationale, Brussels, some time ago, and has now flowered for the first time in Europe. The sepals measure two and a half inches long in the dried state, from which the size of the flowers will be readily apparent. Further particulars are set forth in the subjoined technical description :—

Pseudobulbs oblong, subcompressed, 2½–3 inches long. Leaves recurved, linear-oblong, 13–14 inches long, 1¾–2¼ inches broad. Scapes much shorter than the leaves. Dorsal sepal linear-oblong, acute, 2½ inches long, 5 lines long ; lateral ones broader at the base, more acuminate above, and somewhat falcate. Petals 2 inches long, 3½ lines broad, otherwise like lateral sepals. Lip 19 lines long, narrowed below, broader above, apex recurved, broadly ovate-triangular, undulate ; crest oblong, fleshy, with rounded apex. Column clavate, ½ inch long. Sepals and petals yellow, closely striped with red, except near apex; lip white, striped with red nearly to apex.

ONCIDIUM UNICOLOR, Rolfe.—This is a very elegant species, belonging to Lindley's section Tetrapetala barbata, which is characterised by the lateral sepals being united at the base, and the isthmus of the lip denticulate or fimbriate. It is allied to Oncidium uniflorum, Lindl., O. longipes, Lindl., and O. Crœsus, Rchb. f., but differs from all of them in its more robust habit, and larger flowers, which are of a deep canary-yellow, without any trace of spots; in allusion to which the name is given. It is a native of Brazil, and was introduced by Mr. William Bull, of Chelsea, with whom it flowered in September, 1889, and on subsequent occasions. The raceme is few-flowered, two- to four-flowered in the specimens seen, and a little longer than the leaves. It is very distinct in appearance from most Oncidiums, by reason of its long lateral sepals and unicolorous flowers, and altogether is a bright and attractive little plant :—

Pseudobulbs oblong or ovoid-oblong, subcompressed, 1½–2 inches long. Leaves linear-oblong, subobtuse, 3–5 inches long, 8 lines broad, light glaucous green. Scape erect, 5–6 inches long, 2–4-flowered. Bracts lanceolate-oblong, acute, 4–5 lines long. Pedicels 1½ inches long. Dorsal sepal unguiculate, cuneate-spathulate, subacute, 8–9 lines long, 3½ broad ; lateral ones similar, but 13–14 lines long, and united for 4–5 lines at the base. Petals broadly pandurate, 8–9 lines long ; side lobes 2 lines long, 1½ lines broad ; front lobe 5½ long, 8 lines broad ; isthmus 2 lines long, much broader near base, margin denticulate, crest consisting of several blunt papillæ, in front of which extend three crenulate keels, two lateral ones longer than the central one, and with a deep sinus in the middle. Column 2½ lin. long, wings very short, rounded and crenulate.

PLEUROTHALLIS PUBERULA, Rolfe.—A species which flowered in the Glasnevin Botanic Gardens, under the care of Mr. F. W. Moore, in January last. It is allied to P. univaginata, Lindl., of the section Spathaceæ, and

bears long racemes of small pubescent green flowers, which smell like hawthorn-blossom.—*Kew Bulletin*, p. 169.

BULBOPHYLLUM SPATHACEUM, Rolfe.—Introduced by Messrs. Hugh Low and Co., of Clapton, from the Shan States, Burma, and flowered with Mr. J. O'Brien, of Harrow-on-the-Hill, Middlesex, in July, 1892. It is allied to B. apodum, Hook. f., and has an erect dense raceme of light yellow flowers, with a somewhat brighter lip.—*Kew Bulletin*, p. 170.

BULBOPHYLLUM VIRIDE, Rolfe.—A small West African species, sent to Kew by Philip Crowley, Esq., Waddon House, Croydon, in December, 1890. It is allied to B. intertextum, Lindl. The racemes are very slender, and the small flowers light green, with a pair of small purple spots on the base of the lip.—*Kew Bulletin*, p. 170.

ERIA ALBIFLORA, Rolfe.—A native of the Nilghiri Hills, South India, which flowered both with Mr. J. O'Brien, of Harrow-on-the-Hill, and at Kew. It is near E. articulatum, Lindl., of the section Bryobium, and bears lax racemes of small white flowers.—*Kew Bulletin*, p. 170.

CŒLOGYNE TENUIS, Rolfe.—A Bornean species, introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in August, 1892. It belongs to the small section Flexuosæ, and has light buff flowers.—*Kew Bulletin*, p. 171.

EPIDENDRUM PUMILUM, Rolfe.—A pretty little species, introduced from Costa Rica by Messrs. F. Sander and Co., of St. Albans, with whom it flowered in January, 1890, and afterwards at Glasnevin. It is allied to E. Endresii, Rchb. f., from the same country, which it much resembles in habit. The flowers are light greenish yellow, with an orange-yellow crest on the lip.—*Kew Bulletin*, p. 171.

POLYSTACHYA IMBRICATA, Rolfe.—A native of the Zambesi district, East Africa, which flowered with Mr. J. O'Brien, of Harrow-on-the-Hill, in August, 1891. It is allied to P. ensifolia, Lindl., and has light yellow flowers with a pink lip, which is pubescent inside.—*Kew Bulletin*, p. 172.

ONCIDIUM LUTEUM, Rolfe.—A species belonging to the section Rostrata, which flowered in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, in June, 1892. It is allied to O. chrysopyramis, Rchb. f., and bears lax panicle of light yellow flowers. In the species of this group the column with its elongated rostellum closely resembles the head and beak of a bird. —*Kew Bulletin*, p. 172.

LUISIA AMESIANA, Rolfe.—A native of the Southern Shan States, at about 4,000 to 5,000 feet elevation, imported with Vanda Kimballiana, Rchb.

f., by Messrs. Hugh Low and Co., of Clapton, with whom it flowered in June, 1891. It is allied to L. macrotis, Rchb. f., but has far larger flowers the sepals and petals yellowish white and slightly suffused with purple near the apex, and the lip blotched with dull purple on a lighter ground, and a yellowish green margin. It has also been imported by Messrs. F. Sander and Co., of St. Albans.—*Kew Bulletin*, p. 172.

HABENARIA CINNABARINA, Rolfe.—A very distinct little Habenaria from Madagascar, whose flowers are cinnabar-orange, with a few red spots on the back of the sepals, and thus resemble those of Disa incarnata, Lindl., in colour. It was introduced by Messrs. W. L. Lewis and Co., of Southgate, together with the Disa just named and Cynorchis grandiflora, Ridl.—*Kew Bulletin*, p. 173.

POLYSTACHYA LAWRENCEANA, Kränzlin.—A native of Sierra Leone, imported by Mr. J. O'Brien, which flowered in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking. It is allied to P. laxiflora, Lindl., and has yellowish green sepals and petals, and pale lilac entire lip, with a pilose crest.—*Gard. Chron.*, August 5th, p. 150.

CATTLEYA WARSCEWICZII, Rchb. f., VAR. FRANCONVILLENSIS, O'Brien.—A chaste and beautiful variety with white sepals and petals, the front of the lip marbled with light purple-crimson on a white ground, and the eye-like blotches much paler than usual. It was imported by Messrs. F. Sander and Co., St. Albans, and flowered in the collection of M. le Duc de Massa, Chateau de Franconville, France.—*Gard. Chron.*, August 5th, p. 150.

LÆLIA TENEBROSA, Rolfe, WALTON GRANGE VARIETY.—A beautiful variety with citron-yellow sepals and petals, and a white lip with a purplish crimson disc, from which extend some similar radiating lines. It appeared in the collection of Mr. J. W. Thompson, Esq., Walton Grange, Stone, Staffordshire.—*Gard. Chron.*, August 12th, p. 179.

MILTONIA JOICEYANA, O'Brien.—A supposed natural hybrid, between Miltonia Clowesii and M. candida, which flowered in the collection of Major Joicey, of Sunningdale Park. It is described as very handsome, the sepals and petals clear yellow blotched with chestnut-brown, and the lip purple at the base, passing through lilac to white at the apex, and fading to Indian yellow.—*Gard. Chron.*, August 19th, p. 206.

CYPRIPEDIUM REGINÆ.

Should any of our readers expect to find an account of some magnificent new species under this title, they will be surprised to find that it applies to one described as long ago as 1788, by Walter, in his *Flora Caroliniana*. It is none other than the beautiful Cypripedium spectabile, described by Salisbury in 1791, but in these days, when priority of nomenclature is

considered of so much importance, it seems desirable to call attention to the fact that there are two earlier names for it. Aiton described it in 1789 as C. album, which seems to have been discarded as inapplicable, because the lip is rose-coloured, though no such objection can be urged against Walter's earlier name, for it has been spoken of as the queen of terrestrial Orchids in the northern hemisphere, and little exception can be taken to the remark, as those who know its grace and beauty will admit. The effect of large clumps of it in full flower, as seen in its native home in the peat bogs of Canada and Eastern North America, where in some localities it is very abundant, must indeed be superb. A most remarkable fact is that it has recently been discovered in Western China, on the borders of Tibet, together with the remarkable little C. arietinum, R. Br., which is also a native of Canada and Eastern North America. A note on the cultivation of the present species will be found at p. 103 of our April issue.

Cypripedium Reginæ, *Walt. Fl. Carol.* (1788), p. 222.
C. album, *Ait. Hort. Kew*, ed. 1, iii. (1789), p. 303; *Bot. Mag.*, t. 216.
C. spectabile, Salisb. in *Trans. Linn. Soc.*, i. (1791), p. 78, t 3, fig 3; *Lindl. Bot. Reg.*, t. 1666.
C. canadense, *Michx. Fl. Bor. Amer.*, ii. (1803), p. 161.

SATYRIUM GUTHRIEI.

Hitherto I believe no hybrid Orchid has been recorded from South Africa, though as the species are numerous, and some of them grow intermixed, they may be expected to occur. The above Satyrium has just been described and figured by Mr. Bolus as a new species, from a single specimen found growing in burnt-off places on the Cape Flats, near Cape Town, together with S. candidum, Lindl., by Mr. F. Guthrie. It is mentioned as a remarkable and distinct species, whose "column resembles in some degree that of S. bicallosum, Thunb., while both are, in this respect, very different from that of any other Satyrium known. In every other character this differs greatly from S. bicallosum, and I very much doubt if it is a natural hybrid." It is therefore clear that a suspicion arose in Mr. Bolus' mind, and on comparing his drawings of the three together (S. candidum being unpublished and kindly lent to me by Mr. Bolus), I have no doubt that S. Guthriei is a natural hybrid, and that its proper name is S. × bicalloso-candidum. The two parents are remarkably distinct in every respect, and far apart systematically, yet S. Guthriei is as precisely intermediate as hybrids usually are. The two species grow together in some localities, if not in the precise spot indicated; and in any case both are common on the Cape Peninsula, an area about a fourth larger than the Isle of Wight. Formerly it was the custom to consider everything either a species or a variety, and to ignore hybrids, which are neither the

one nor the other, but this, happily, is no longer possible. I am more than ever convinced of the necessity of separating these natural hybrids, as nothing tends so much to obscure true affinities. Take the present plant for example. From its column it should evidently be placed next to S. bicallosum, yet in most other respects it is more like S. candidum, especially in its long tapering spurs. The example in question is therefore especially interesting, and it is probable that others will be found.

Satyrium Guthriei, *Bolus Ic. Orch. Aust.-Afr. extra-trop.*, I., t. 21.

R. A. R.

NOTICES OF BOOKS.

Icones Orchidearum Austro-Africanarum extra-tropicarum; or, Figures, with descriptions, of extra-tropical South African Orchids. By Harry Bolus, F.L.S. Vol. I., Part 1, tt. 1–50. London: William Wesley and Son, 28, Essex Street, Strand.

This is a work for which we have nothing but praise. Its object, as set forth by the author, is to give an accurate figure with dissections, taken from living specimens wherever possible, of the Orchids of South Africa, which, as is well known, are both numerous and interesting. The first part now before us, contains fifty plates, with four exceptions partly coloured, from drawings by the author, which will prove invaluable as aids to the identification of these plants. Mr. Bolus has qualified himself for the work by many years of careful study, and his papers in the *Journal of the Linnean Society*, with his later *Orchids of the Cape Peninsula*, are sufficient guarantee of the quality and reliability of the work. The present volume may be compared with the *Refugium Botanicum*, as regards its arrangement, while in the execution of the plates it shows a decided improvement on the earlier work of the same author. The fifty-one species described belong to sixteen genera, and include the following nine novelties: Angræcum caffrum, A. Maudæ, Habenaria Galpini, Satyrium Guthriei (see p. 269 of our present issue), S. ocellatum, Pachites Bodkini, Disa sabulosa, D. conferta, and Brownleea Galpini. Some time ago the blue Disas received some attention in this country, and here we find a figure of the beautiful D. graminifolia, Ker, not the plant formerly cultivated under this name which belongs to another species. We extract the following:—

It is one of the commonest species within our limits, has a rather long flowering period, and attracts universal observation by its beauty and brilliancy. . . . In spite of repeated efforts it does not yet appear to have been successfully cultivated in England. It may be expected that this difficulty will eventually be conquered, and if so the species will soon become deservedly popular amongst Orchid cultivators. Horticulturists will do well to remember that during its flowering period in its native home the plant receives little or no water at its roots, being dependent for moisture on what is stored up in its large tubers and upon the occasional mists which envelop the mountain sides.

The handsome Disa ferruginea, which has orange-vermillion flowers, generally accompanies the preceding, and this species we are told is abundant on Table Mountain, and largely sold in bouquets in the streets. Brownleea cœrulea is noted as a very pretty and distinct species worthy of cultivation, to which we may add that it has already flowered in England (see p. 282 of our present issue). Disa tripetaloides has proved so easy of culture in England that we must call attention to its yellow-flowered variety aurata, here figured, of which we read :—

> Flowers deep but bright golden-yellow. I was long familiar with this wide-spread species in its usual colour (rosy pink, often with carmine spots); but it is so unusual for Cape Orchids to vary from such a colour into yellow that when I first found this I could hardly suppose it to be the same species. Yet it is undoubtedly so.

Satyrium pumilum, Thunb., is a remarkable little species, with flowers marked like those of a Stapelia, and, further, the flowers have a heavy odour of putrid flesh. Pachites Bodkini is a very remarkable species, described from a single specimen, and it is very singular that the allied P. appressa, Lindl., is only known from four specimens, one found by Burchell in 1815, one by Krauss twenty-four years later, and two others found recently by Mr. Schlechter, from which the species is to be figured in the next part of this work. Corycium crispum, Sw., is remarkable for its crisped leaves. A beetle appears upon Plate 35, Disa elegans, Rchb. f. with the following very interesting note :—

> Upon one of the flowers was found a beetle, Peritrichia sp., as my friend M. Peringuey informs me, belonging to a group of well-known fertilisers, and which had a pollinium attached to its thorax. This being only the second instance of an insect actually carrying Orchid pollen which I have seen during many years' study of Cape Orchids, I have thought it desirable to figure it with the plant.

Many other interesting facts could be pointed out, for which those interested in these charming plants must turn to the book itself.

Martius' Flora Brasiliensis. Volume XIII., Part 3. *Orchidaceæ.* By Alfred Cogniaux. Fasciculus CXIV.; 160 pages, 34 plates.

The first fascicle of the volume relating to Orchids of the above important work has just appeared, and comprises the genera Selenipedium, Habenaria, Chloræa, Bipinnula, Pogonia, Pogoniopsis, Epistephium, Vanilla and Pelexia; in all one hundred and sixty pages, and thirty-four plates, containing analytical drawings of seventy-three species, with additional sketches of habit in the majority of cases. The general character of this great work is so well known that it is needless to particularise. With regard to the present volume, we may state that the arrangement adapted is that of Prof. Pfitzer, which, as is well known, is largely based on the characters of the

vegetative organs, and frequently separates closely allied plants, and sometimes brings together those which have no generic affinity. It is not adopted in its entirety however, as the very first genus shows. Pfitzer separated the species of Selenipedium with coriaceous leaves and added them to those of Cypripedium with a similar character, under the name of Paphiopedilum: which M. Cogniaux very properly rejects. Of course, the line must be drawn somewhere. Six species of Selenipedium are enumerated, but we observe that three of them are said only to grow in Guiana, and their inclusion is therefore unfortunate, as one has to go through each of the species, before being able to ascertain how many really grow in Brazil. How long would this take for the exactly one-hundred Habenarias enumerated? Selenipedium palmifolium is also a Guiana species only included on the authority of Martius, whose specimen probably belongs to the Brazilian S. Isabelianum. S. Sargentianum, described at p. 239 of our last issue, was, of course, too late to be included. S. paulistanum, mentioned on the same page, is however not recognised, being considered synonymous with S. vittatum, through Rodriguez stated that it was quite distinct. Thus we have only three undoubted Brazilian species of Selenipedium, namely, S. vittatum, S. Isabelianum, and S. Sargentianum. Vanilla must also be reduced from eight species to six on the same grounds, not even the prophetic opinion that one of them will probably yet be discovered in Brazil being sufficient to justify its inclusion. Prophecy might be indulged in in footnotes, or in smaller type; and the numbers should certainly be omitted, seeing that the work is a *Flora Brasiliensis*. We call attention to these points, because we are anxious to see so excellent a work, and one that is likely to remain a standard of reference for many years to come, all that it professes to be. Further numbers will be awaited with interest.

EPIDENDRUM EBURNEUM.

This distinct and pretty Epidendrum has re-appeared in the collection of Major-General E. S. Berkeley, Spetchley, Bitterne Park, Southampton, who received it from Panama, whence also the original specimens came. It was described in 1867, from a plant which flowered in the collection of T. R. Tuffnell, Esq., of Spring Grove, Isleworth, in the previous December. It was sent by Mr. P. Henderson, of the Royal Mail Packet Company's service, who discovered it within a few miles of Colon, Panama, growing in swamps close to the railway. It is allied to E. leucochilum, Klotzsch, and E. longiflorum, Kunth. The flowers are largish and few in number, the sepals and petals yellowish green, and the broadly ovate lip white, with golden yellow calli at the base. It would appear to be a very rare plant.

Epidendrum eburneum, Rchb. f. in *Gard. Chron.*, 1867, p. 404; *Bot. Mag.*, t. 5643.

CATTLEYA MENDELII.

THE subject of our illustration is a magnificent specimen of this handsome Cattleya, from the collection of R. Brooman White, Esq., Arddarroch, Gare-

Fig. 14. CATTLEYA MENDELII.

loch Head, Dumbartonshire. Mr. White, as is well known, has a very beautiful series of varieties, and the marked success with which they are

grown is apparent from our illustration, which is an absolute *fac simile* of a photograph taken by him, and kindly forwarded to us, together with several others. The plant had forty-two expanded flowers when the photograph was taken. It is a superb variety, of excellent form and substance, with blush sepals and petals, and a lip which is described as like port wine and plum mixed. This beautiful Cattleya is a great favourite at Arddarroch, so much so that an importation of it was made direct, and the present example is only one of a series of equally well-grown specimens.

GALEANDRA NIVALIS.

When this pretty little Galeandra appeared, in 1882, in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, nothing was known of its origin. Information now comes to hand on this point from two different sources, which it is desirable to place on record. The first is from Mr. E. S. Rand, of Pará, who states that this species is a native of Rio Negro, and is very abundant just below Manaõs, growing in large tufts. "I have seen them," he writes, "with at least twenty flowering pseudobulbs. It is one of the most beautiful Orchids which I know, and it keeps blooming from the old pseudobulbs for years. It was discovered by me." The second communication is from Major-Gen. E. S. Berkeley, who states that his plants were brought home by a gentleman who collected them on the Rio Branco, a tributary of the Amazon, together with G. Devoniana and other Orchids. One of the plants is very distinct in habit, both from G. nivalis and G. Devoniana, yet the flower is very near the former, differing chiefly in having a larger flower and longer spur, and is apparently a variety of the same.

It is thus very interesting to be able to clear up the habitat of this plant. It appears to me to be very near G. Descagnolleana, Rchb. f. (*Ill. Hort.*, xxxiv. p. 63, t. 22), which may be a form of the same. The smaller flower sent by Major-Gen. Berkeley also bears a considerable resemblance to the New Granadan G. dives, Rchb. f. and Warscew., which again is near G. Baueri, Lindl., from Guiana (not the Mexican of that name, which is G. Batemanii, Rolfe). Mr. Rand states that there are several species on the tributaries of the Upper Amazon, and Rodriguez has described eight new ones from Brazil. The fact is, we have yet much to learn about this interesting little genus, and additional material would be welcome.

Galeandra nivalis, Hort., *Gard. Chron.*, 1882, i. pp. 536, 537, fig. 85, *id.*, 1892, ii. p. 431, fig. 70; *Ill. Hort.*, xxxiii., p. 63, t. 555.

R. A. R.

SEEDLING ORCHIDS.

The following notes may be of interest to your readers, as it serves to show how rapidly seedlings may sometimes be produced. On October 4th, 1892, I fertilised Cattleya guttata, C. chrysotoxa and Lælia Dayana with the pollen of Cattleya Hardyana, Young's variety. On April 5th, 1893, the guttata pod had cracked, and I sowed the seed, while on August 9th the seedlings are plainly visible. The chrysotoxa pod only ripened on August 10th, and is now sown, while the Dayana pod is still unripe. I keep a very strict record, so there is no mistake. I have had Cypripedium seedlings up in four months from date of sowing the seed, but the pod had taken longer to ripen.

REGINALD YOUNG.

[A very interesting note, and we hope Mr. Young will succeed in flowering his seedlings, and that they may prove good. Cannot we induce him to try to cross Cattleya Warscewiczii (gigas) and C. Dowiana, or Lælia purpurata with Cattleya Leopoldi and C. intermedia. There is a great interest attached to proving the parentage of supposed natural hybrids, and the above crosses should yield three of the most beautiful ones yet known, namely, Cattleya × Hardyana, Lælio-cattleya × elegans, and L. × Schilleriana. These experiments would be well worth trying.—ED.]

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 206.)

Two additional forms of the polymorphic Odontoglossum × luteopureo crispum have been discovered, and may conveniently be mentioned here:—

Odontoglossum × Wilckeanum var. atropurpureum, Hort., *Gard. Chron.*, 1891, i. p. 563. O. crispum var. President Zhaldua, Rodigas in *Ill. Hort.*, xxxvi. p. 31, t. 79. A dark variety, in which the disc of the sepals is wholly dark red-brown, with the margin and apex yellow, and the petals almost as heavily marked. It appeared in the collection of M. Charles Vuylsteke, of Loochristy, Ghent.

O. × Wilckeanum var. nobilior, Hort., *Gard. Chron.*, 1892, i. pp. 698, 700. A light coloured variety, with deeply toothed petals, pale ground colour, and light cinnamon spots. It was exhibited by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, at the Temple Show in May, 1892, when it received an Award of Merit from the Royal Horticultural Society.

3. ODONTOGLOSSUM LINDLEYANO-CRISPUM.—We now come to the third and last combination with Odontoglossum crispum, namely O. Lindleyanum. This particular hybrid is also represented in numerous collections, though it may not be quite so common as the two preceding ones. Nor has it received such a multiplicity of names.

Odontoglossum Lindleyanum is one of the most widely distributed of the New Granadan species, and occurs on the eastern Cordillera in various localities between Bogota and Ocaña, and on the central one from the Nevada de Tolima northwards. It is only in the Bogota district, where its habitat overlaps that of O. crispum, that the particular hybrid now under consideration occurs, and most of the plants in cultivation have flowered out of importations of the latter.

The appearance of this hybrid dates from 1872, when a plant flowered in the establishment of Messrs. James Veitch and Sons, of Chelsea, in an importation of Odontoglossum crispum. It was sent to Prof. Reichenbach who named it O. × Coradinei, after one of the collectors who sent it home. The author described it as a beautiful thing, probably a hybrid between O. triumphans and some species of the O. odoratum group, which, however, is clearly not the case. This original form has flowers considerably smaller than those of O. crispum; the sepals and petals light yellow, with one to three chestnut-brown blotches; the lip rather small, entire, apiculate, and light yellow, with a large chestnut-brown blotch in front of the two calli and the column longer, with nearly entire wings. All these characters show a decided approach to O. Lindleyanum.

The variety hemileucum differs chiefly in having a white ground to the flowers, and smaller, more numerous spots. It appeared in 1883, in the establishment of Mr. W. Bull, of Chelsea.

The variety grandiflorum appeared in the collection of M. Charles Vuylsteke, of Loochristy, Ghent. It has rather larger flowers, and, according to the figure, bears a considerable resemblance to O. × excellens. O. triumphans is again spoken of as one parent, which in this case may be correct, though, if so, it must be transferred elsewhere. It is difficult to judge without seeing a flower.

Odontoglossum × ligulare apparently belongs here, and chiefly differs in its darker ground colour and broader lip. The sepals and petals are described as nearly orange, with two or three great brown blotches, and the lip unusually broad, and lighter yellow, with the disc wholly covered by a large dark-brown blotch. It appeared in the collection of Sir N. M. de Rothschild, Tring Park.

This hybrid is also very variable, though probably less so than the two preceding ones, and in the majority of cases the influence of O. Lindleyanum preponderates, especially in the lip and column. The inflorescence is unbranched, as in both parents. The sepals and petals are usually rather narrow, but in some forms, especially in the original one, there is an approach to the broader segments of O. crispum. The ground colour may also be nearly white, as in this parent, though more commonly it is some shade of yellow, with few or numerous, large or smaller, chestnut-brown spots. One form has narrow and elongated segments analogous with those of O.

Brassia among forms of O. × glorioso-crispum, and another, which apparently belongs here, has numerous small spots on a cream-yellow ground. In most forms an unmistakable combination of characters of the two parent species may be traced, though in different individuals a considerable range of variation, both in form and colour, may be observed.

The following is a list of the forms of this hybrid (one however being doubtful), with references to descriptions and figures :—

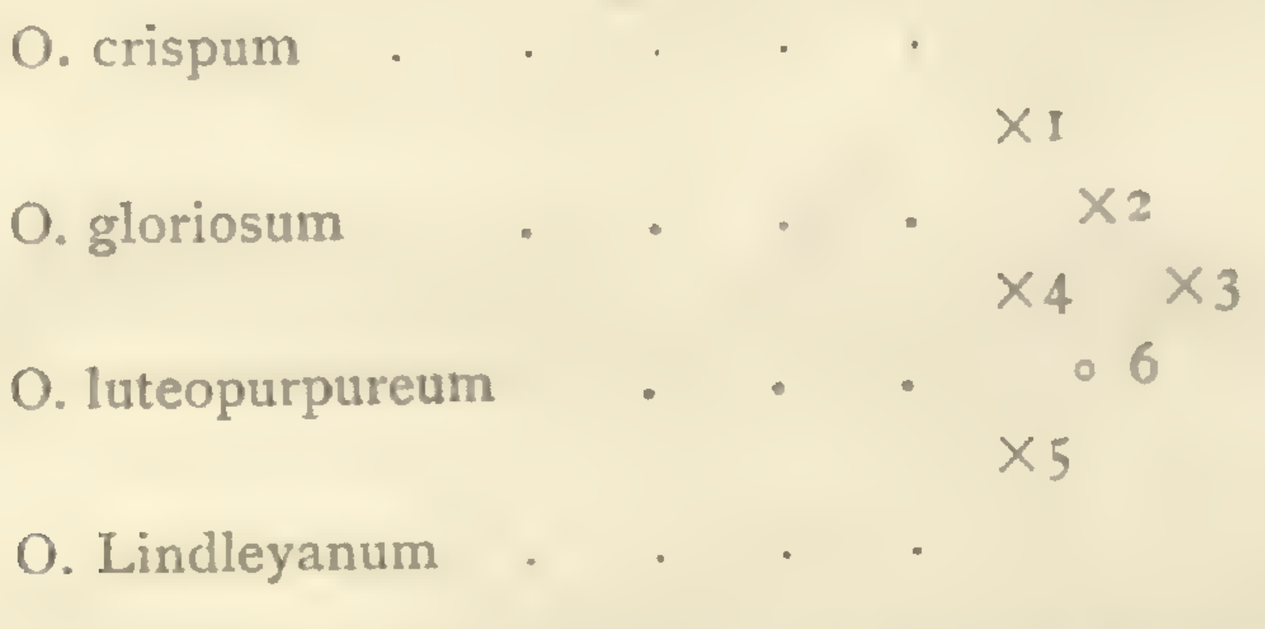
Odontoglossum × Coradinei, Rchb. f. in *Gard. Chron.*, 1872, p. 1068, fig. 251 ; *Id.*, 1885, ii. p. 200, fig. 40 ; *Id.*, 1886, i. pp. 268, 269, fig. 51 ; *Rchb. f. Xen. Orch.*, ii. p. 208, t. 192, fig. 1 ; *Orchid Album*, ii. t. 90 ; *Orchidophile*, 1885, p. 132, fig. 5 : *Reichenbachia*, ser. 2, i. p. 45. t. 21. O. Lindleyanum var. Coradinei, *Veitch Man. Orch.*, i. p. 43.

Var. grandiflorum, Rchb. f. ex *Lindenia*, ii. p. 93, t. 93 (there seems a slight doubt as to whether this really belongs here).

Var. hemileucum, Rchb. f. in *Gard. Chron.*, 1883, i. p. 688.

O. × ligulare, Rchb. f. in *Gard. Chron.*, 1882, i. p. 558. O. Lindleyanum var. ligulare *Veitch Man. Orch.*, i. p. 43.

This completes the list of combinations with Odontoglossum crispum, but among the four species which grow together in the Bogota district three other combinations are possible, as may be seen at a glance in the following diagram :—



KEY TO DIAGRAM.—Diagonal lines are supposed to extend from each species until they intersect, and each intersecting point represents a possible combination or hybrid. A cross at this point indicates our knowledge of the existence of the hybrid ; a circle, that it is not known. The numbers explain themselves.

It is interesting to note that five out of the six possible combinations here indicated are already known. No. 1 represents O. × glorioso-crispum, 2, O. × luteopurpureo-crispum, and 3, O. × Lindleyano-crispum. These we have already considered. No. 4 represents the hybrid between O. gloriosum and O. luteopurpureum, and 5, between O. luteopurpureum and O. Lindleyanum. The remaining one, No. 6, between O. gloriosum and O. Lindleyanum I have hitherto failed to detect, though its appearance may be anticipated. One consideration, however, is worthy of mention in this connection. Neither of these species are sought after for horticultural purposes in the same way as is the beautiful Odontoglossum crispum, and, as so many of the hybrids now in gardens have appeared among importations of the latter, the fact is a suggestive one. If there is a locality in which these two species

grow intermixed, a search when the plants are in flower might yield some interesting results. I have heard of importations of both these species being received, but do not know if any hybrids flowered out of them. I am not without hopes that the attention now being paid to this subject generally will result in a considerable increase in our knowledge, as it is a matter of great interest, both from a horticultural and a scientific standpoint.

R. A. R.

(To be continued.)

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By W. H. WHITE, Burford, Dorking.

THE month of September is generally considered by Orchid cultivators as the commencement of what is termed the resting period, and therefore the great object of the grower should be to give the plants every assistance to thoroughly ripen and consolidate their growths, so as to prepare them to pass safely through the coming winter. As the autumn advances it will be necessary to gradually expose the collection as a whole to extra sunlight, and at the same time, on every favourable opportunity, a free circulation of air should be encouraged. The blinds on the north side of the houses will scarcely be required at all, while those facing south need not be let down so early as usual in the day, and must, of course, be drawn up sooner in the afternoon, while in a very short time they may be dispensed with altogether. In this matter of reducing the amount of shading, it is very important that discrimination should be used, as there are certain plants that are liable to permanent injury if exposed to extra sunlight. For instance, such plants as Phalænopses, Angræcums Ellisii, citratum, and Kotschyi, Phaius tuberculosus, Cypripediums generally and C. superbiens in particular, Cœlogyne asperata, and C. Cumingii, also many of the Oncidiums, Masdevallias, and Odontoglossums, are easily affected by too much sunlight. I am well aware that in mixed collections of Orchids it is a difficult matter to suit all plants in their special requirements as regards shading, especially during the spring and autumn months, but a great amount of good may be done by every grower in selecting the most suitable positions for certain plants. I remember a good grower, when writing on this point, stating that he learnt a great deal by visiting other collections and noting down the positions that the best grown plants occupied.

One of the greatest mistakes young beginners in the cultivation of Orchids are liable to, especially when the plants are at rest, is the continual keeping up of excessive supplies of atmospheric moisture. They should bear

in mind that the amount of sunlight and heat is gradually diminishing, and the external air is not so hot or dry as during the preceding months, therefore there is no necessity for damping down so frequently as in the hottest part of the season. Neither will the plants require watering at the root so often. During the present month, unless a considerable amount of fire-heat is requisite to keep up the temperature, the East Indian and Cattleya divisions may be moderately damped down, both morning and evening. Strictly attend to the drying up of each division during the middle of the day, as mentioned on page 119. This drying-up process, especially at the present time, will greatly assist the proper ripening of the bulbs, and at the same time check any development of spot disease. By closing both houses up at about three p.m., the temperatures may be allowed to rise to between 80° and 90° with sun-heat. Immediately the houses are damped down, start the fires gently, so that, if required, enough fire-heat may be at command to prevent the temperatures from falling too low during the night. By partially opening the lower ventilators at about eight p.m. a close unhealthy atmosphere may be avoided. The thermometer in the hottest house by the morning should be at about 68° in this house, and in the Cattleya or Intermediate at 65°.

In the cool houses, if properly attended to in the matter of ventilation, damping down, and shading, the temperature will be a few degrees below the external air.

Amongst the plants now in flower Vanda Sanderiana stands out conspicuously, and ever since its introduction it has been considered a rare and first-class Orchid. Its large, noble flowers certainly give it a commanding appearance—the more so, as no other of its class can approach it in size, and when seen with several spikes fully expanded, it is a decidedly handsome acquisition to our tropical houses. This fine Orchid has generally been found difficult to establish, and those who possess plants of it should give them every encouragement as regards light, heat, and moisture, shading them, however, from actual sunshine. Several experiments have been tried here with plants of it. An exceptionally fine imported plant was placed in a teak basket, with sphagnum moss placed loosely about the stems, with the idea of encouraging the production of new roots; which it certainly did, though not in sufficient quantity to keep the lower leaves intact. The next step taken was to substitute clean, broken crocks for the sphagnum, but this failed to produce the desired effect. Ultimately it was decided to make a long upright teak cylinder for it. The plant was then placed in the centre and made firm with copper wire, no material whatever being used about the roots. In a short time the old roots commenced to push out young ones, which soon enveloped the wood in the greatest state of luxuriance, some of them measuring upwards of four feet in length. This particular plant last year gave us seven spikes, pro-

ducing in all fifty-two blooms. It is now showing its spikes again, of which at present there are six, though others are expected. These have from eight to ten flowers on each, and soon will make a grand display. I may add that the place selected for this plant is in the hottest corner of the East Indian house, near the roof glass. One thing specially to be studied in this mode of cultivation is to moisten the roots without drenching the foliage. Here the stems and roots are carefully watered two or three times a day during hot, sunny weather, but on dull days only once or twice. Vanda Sanderiana is subject to the attacks of a small species of brown scale, which, if not diligently sought after and eradicated, quickly disfigures its foliage.

Angræcum Scottianum is a plant that does well hanging side by side with Vanda Sanderiana, and treated almost the same, the only difference being that it delights to have its foliage well syringed over at closing time. One important matter not to be neglected is to always keep the thin stems upright and tied firmly to the teak rods, so that the small roots, immediately they commence to grow, may have something substantial to cling to. Angræcum Scottianum is a lovely little gem, and, although a rare Orchid, is represented in many collections in this country, where in almost every case it is highly appreciated. Under the above treatment our plant has done well, having grown above the teak rods, which will require to be lengthened, as previously advised for Vanda teres.

Pachystoma Thompsonianum is another lovely Orchid, and a specimen plant well bloomed would be a grand object. Unfortunately no large importation has ever made its appearance in England, consequently it is still very rare in collections. A plant has been in bloom here for the past month, and has been greatly admired by many Orchidists, its graceful spike bearing flowers with pure white sepals and petals and a deep magenta lip, being exceedingly attractive. This beautiful plant being of West African origin, and from a moderately low elevation, requires the hottest division to meet its cultural requirements. It succeeds admirably when grown in a small shallow pan, and suspended close to the roof glass of the house, at the same time carefully attending to its necessities in the matter of water, cleanliness, &c.

A plant difficult to preserve in a satisfactory condition for any great length of time is Galeandra Devoniana. It is an Orchid which requires extra care and special individual treatment to bring and keep it in perfection, but when well grown it assuredly compensates for all the labour bestowed upon it. So far as my observation goes, it appears that when the plants have done blooming they should have a longer and more decided rest than is generally given. Care should also be taken not to allow any water to touch the young growths until the new roots have a firm hold of the compost, as they are very susceptible to damp at the base. Another

great drawback to their well-doing is the constant attacks of small yellow thrips. These destructive insects are not often discernible, except with a magnifying glass, and then sometimes not until considerable damage has been done. The best remedial measure against these pests is to puff a little tobacco powder or Scotch snuff into the centre of the young growths occasionally, which will check their propagation. Immediately the plants commence to grow, they should be placed where they can have abundance of heat and moisture, and when well rooted copious supplies of water may be given until the flowers fade, when a drier and cooler situation is desirable.

By this time plants of Lælia purpurata will have fairly started into growth, and their young breaks will be commencing to emit fresh roots. No time should be lost in giving those which require it a shift into larger-sized pots, in which operation sufficient space should be allowed for two or three seasons' growth, so that they may not be disturbed again for some considerable time. If the plants are in good health and the pot full of roots, it is better to break the old pot, picking out as much of the soil as possible without causing injury to the roots, than to turn the plants out in the usual way. The same materials will suit this plant as advised for Cattleya Trianæ, on page 121.

The best varieties of Cattleya Eldorado, not forgetting the pure white variety with orange-yellow throat, named C. Eldorado Wallisii, are certainly very desirable Orchids. These will now, in many collections, be in bloom, and remain in beauty for a period of four or five weeks. All of them have a more or less powerful and agreeable perfume, which adds greatly to their charms. These Cattleyas may be grown in pans suspended near the roof glass of the Mexican house, choosing a position where they may obtain all the light possible. The best time for re-potting is immediately the flowers are faded, as the newly-made growths send out from their base a number of fresh roots, which readily enter and appreciate the new compost. After re-potting only enough water must be given to entice the young roots to grow and prevent the old ones from perishing.

Last month I gave some hints on potting Masdevallias. As soon as these are finished, the Odontoglossums of the crispum, Pescatorei, triumphans, and gloriosum types may be taken in hand, as no doubt the beginning of September is the best time of the year for potting cool house Orchids. Many of the young breaks will be fast sending out their roots, which, having fresh material to grow in, become well established before winter commences. Pot the plants moderately firm, keeping the base of the bulbs just above the rim of the pot. When completed, prick in a few heads of living sphagnum moss over the surface, which, when growing freely, is very beneficial to the health of the plant. The exceptionally hot and dry weather during the past summer has been very trying to the health of cool Orchids generally, and favourable to the production of small yellow thrips, which,

when once they obtain a footing, always prove troublesome to the young growths of Odontoglossums. These should always be diligently sought after, and all possible means taken to ensure their destruction.

ODONTOGLOSSUM LONDESBOROUGHIANUM.

Some growers experience great difficulty in the cultivation of this fine species, but as it succeeds admirably with me, a few notes on the treatment adopted will no doubt prove acceptable to the readers of the ORCHID REVIEW. In 1881 my master purchased a single plant on a block with two bulbs, which had been imported but a short time. I took it off the block and potted it with two-inch pieces of charcoal, finishing off with a little sphagnum moss. In a very short time it began to improve. It is kept quite cool, about 45° F. in winter, and whenever the weather is mild I give air night and day. The result is that I have now six plants in the best of health, with three or four bulbs each, and they flower every year. Under the above treatment it is one of the best growers I know of, and very floriferous.

H. HORNER.

[It would be interesting to know the treatment as regards summer temperature and shading, and what other plants are grown with it. It may be that cool treatment is the secret of success, as with Epidendrum vitellinum and Cattleya citrina from the same country. Cultivators have been working in the dark, as the precise habitat has not been divulged. Messrs. Veitch recommends a maximum of sun-light and sun-heat, near the roof-glass of Cattleya house, apparently because it is said to grow on shelving rocks fully exposed to the sun, where the temperature rises to 120° F. by day. Messrs. Backhouse received it from the same region as O. citrosmum.—ED.]

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

PHAIUS TUBERCULOSUS, Blume. An excellent figure of this, the most beautiful species in the genus, from a fine plant which flowered at Kew. It is there grown on a piece of tree-fern stem, covered with sphagnum.—t. 7307.

BROWNLEEA CŒRULEA, Harv. A very pretty terrestial Orchid, whose flowers are lilac-blue with a few darker spots, and borne in an erect raceme. It is closely allied to Disa, and the dorsal sepal has a very long spur; the flowers being nearly two inches long. It is a native of eastern South

Africa, from Grahamstown to Natal, and has recently been found in the highlands of Madagascar.—t. 7309.

GARDENERS' CHRONICLE.

DENDROBIUM DENSIFLORUM, Wall. A fine specimen plant, grown by Mr. Princep, gardener at Buxted Park, Sussex.—July 29th, pp. 122, 123, fig. 30.

MORMODES PARDINUM, Batem. VAR. UNICOLOR, Hook. The handsome yellow unspotted variety, which has been rare in gardens until recently, when plants were imported by Messrs. F. Sander and Co., of St. Albans.—August 12th, pp. 180, 181, fig. 34.

LÆLIA TENEBROSA, Rolfe, WALTON GRANGE VARIETY. (See p. 268 of our present issue.)—August 19th, p. 221, fig. 42.

GARDENERS' MAGAZINE.

HABENARIA MILITARIS, Rchb. f.—July 29th, p. 436, with figure.

CATTLEYA FORBESII, Lindl.—August 12th, p. 468, with figure.

JOURNAL OF HORTICULTURE.

DENDROBIUM HOOKERIANUM, Lindl. A handsome species allied to D. Brymerianum.—July 20th, p. 49, fig. 8.

CYPRIPEDIUM × WINNIANUM, Rchb. f. A pretty little hybrid derived from C. villosum ♀ and C. Druryi ♂.—July 27th, p. 71, fig. 12.

MASDEVALLIA × GELENYANA, Rchb. f. A very graceful little hybrid derived from M. caudata Shuttleworthii ♀ and M. xanthina ♂.—August 10th, p. 119, fig. 18.

LÆLIA TENEBROSA, Rolfe, WALTON GRANGE VARIETY. (See p. 268 of our present issue).—August 19th, p. 150, fig. 22.

LINDENIA.

ODONTOGLOSSUM CRISPUM, Lindl., VAR. FERRIERENSE, Hort. A handsome variety, with a very large chestnut blotch on the disc of the sepals and petals, and a few small ones, chiefly on the lip.—t. 381.

MASDEVALLIA HARRYANA, Rchb. f., VAR. KEJELJANI, LILACINA, CARNEA, REGINÆ, and ILLUSTRIS, Hort. A series of five varieties, showing some of the variations to which this plant is subject.—t. 382.

CHYSIS BRACTESCENS, Lindl. A well-known Mexican plant, which was introduced to cultivation in 1840, by Mr. John Barker, of Birmingham.—t. 383.

MILTONIA WARSCEWICZII, Rchb. f. A handsome species, with branched panicles of richly coloured flowers. It is a native of Peru and New Granada, and was sent by Wallis to M. Linden, with whom it flowered in 1869.—t. 384.

An account of the history of Eulophiella Elisabethæ also appears in this, the July number of this work.

ORCHID ALBUM.

ODONTOGLOSSUM EDWARDII, Rchb. f. A handsome violet-flowered species, with yellow crest, from Ecuador.—t. 465.

CATTLEYA TRIANÆ, Lind. and Rchb. f., VAR. REGINÆ. A beautiful variety, with white sepals and petals, and the lip deep purple-crimson in front with a broad white margin and the usual yellow disc. It flowered with Messrs. B. S. Williams and Son, of Upper Holloway, and is now in the collection of the Hon. F. L. Ames, Boston, U.S.A.—t. 466.

CYMBIDIUM EBURNEUM, Lindl.—t. 467.

CATTLEYA DOWIANA AUREA STATTERIANA. This is the C. × Hardyana var. Statteriana, Rolfe in *Lindenia*, viii., p. 77, t. 373, a very beautiful form with nearly white sepals and petals, but certainly a natural hybrid between C. Warscewiczii and C. Dowiana aurea, and not a variety of the latter, as here considered. It appeared in the collection of T. Statter, Esq., Stand Hall, Whitefield, Manchester.—t. 468.

CONTINENTAL NOTES.

By C. DE BOSSCHERE.

AMONG the Orchids exhibited at the August horticultural meeting at Ghent were several very interesting forms. From M. Alfred Van Imschoot came a fine Anguloa eburnea, a beautiful variety of a rare and difficult Orchid: Lælio-cattleya × elegans Turneri; Cattleya Eldorado var. Wallisii, and a very pretty Cattleya Shepherdiana [We do not know a Cattleya under this name.—ED.]. Madame H. de Waorin de Rousella sent Vanda cœrulea, with large flowers of remarkable colour. Cypripedium × Youngianum from M. Jules Hye confirmed brilliantly the eulogiums which have been passed upon this superb novelty. Odontoglossum Schroederæ, from the same exhibitor, is a hybrid of great beauty, worthy to take a leading place in collections [This also we do not know, though there is an O. Schroederianum, Rchb. f., a very obscure plant]. O. Harryanum and O. × tentaculatum were also good and well-flowered specimens. Messrs. Vervaet and Cie. had also two excellent examples of good culture in Dendrobium thyrsiflorum and Saccolabium guttatum. A special mention is due to a new hybrid Cypripedium, raised by M. J. Moens, called

CYPRIPEDIUM × CLOTILDE MOENS.

This handsome form is a hybrid from C. × Leeanum superbum and C. Haynaldianum, between which it is clearly intermediate in character. The flowers are racemose, very large and open. The dorsal sepal is clear green at the base, spotted with ashy brown, the centre clear rosy yellow, spotted

and tinted with lilac-rose, the upper two-thirds pure white, and the mid-vein violet-rose. The lower sepal is white bordered with cream colour. The petals are arched, the base olive-yellow spotted with brown, and the apex clear violet-rose. The lip is large, nearly square, and clear green shaded with chestnut-brown. The staminode is horse-shoe shaped, dead white, with amethyst-green markings in the centre, and the two teeth majenta-violet. The leaves are long and clear green, the scape dark, and the bracts green spotted with black.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THERE was a fair display of Orchids at the Drill Hall, James Street, Victoria Street, Westminster, on July 25th.

A First-class Certificate was awarded to Miltonia vexillaria "Daisy Haywood," which came from the collection of T. B. Haywood, Esq., F.R.H.S., Woodhatch, Reigate (gr. Mr. J. Salter). This is certainly the finest and purest variety of M. vexillaria yet known. The spike had eight flowers, each nearly four inches across, pure white, with a sulphur-yellow stain at the base of the lip.

T. A. Gledstanes, Esq., F.R.H.S., Manor House, Gunnersbury (gr. Mr. H. Denison), exhibited three strong plants of Cattleya superba splendens, which it was stated had flowered twice a year in a warm, sunny house. A Cultural Commendation was given.

W. R. Lee, Esq., F.R.H.S., Beech Lawn, Audenshaw, Manchester (gr. Mr. T. Billington), sent a fine form of Cattleya Gaskelliana, "Audenshaw" variety, with mauve segments, and a deep purple lip.

Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited spikes of Lælia crispa superba, an exquisite form with a deep violet-purple lip, and white sepals and petals, which received a First-class Certificate. From the same collection came Lælio-cattleya × Amesiana, a hybrid between the above-named variety of Lælia crispa ♀ and Cattleya maxima ♂, with pale lilac sepals and petals, and a large deep rose-purple lip, beautifully fringed round the mauve edge. The Stand Hall variety of Cattleya Rex was also shown, with sepals and petals white, and lip rose with bright yellow blotches in the throat.

H. Tate, Esq., F.R.H.S., Allerton Beeches, Liverpool (gr. Mr. J. Edwards), exhibited a strong plant of Cypripedium × Tryonianum (in commemoration, doubtless, of the late Admiral), a hybrid between C. ×

Harrisianum ♀ × C. superbiens, Demidoff variety ♂. The upper sepal was very dark shining purple, the petals and lip being a mixture of purple, brown and green. Cattleya × Hardyana, Tate's variety, received an Award of Merit. The segments are deep rose-purple veined with white, and the lip very dark purple with a rich golden blotch at each side.

In conjunction with a group of ornamental stove plants, Messrs. J. Laing and Sons, Forest Hill, exhibited a fine specimen each of Disa grandiflora and Saccolabium Blumei.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., sent a large lilac-flowered Cattleya Warscewiczii Turnbulliana, with a mottled lilac-purple and yellow lip; also a flower of Cattleya Dowiana.

Messrs. P. MacArthur and Co., Maida Vale, exhibited a group in which Cypripedium superbiens, a fine C. Volonteanum, Brassavola caudata, Oncidium Jonesianum, O. prætextum, &c., were chiefly noticeable.

An Award of Merit was given to Cypripedium × Edwardii (C. Fairieanum ♀ × C. superbiens ♂), exhibited by Messrs. Pitcher and Manda, Hextable, Swanley. The flower is not unlike C. × vexillarium (C. barbatum × C. Fairieanum ♂) but is larger. The white upper sepal is beautifully feathered with purple veins and shaded with purple at the sides, the hairy-edged petals pale green with purple edges, and numerous purple spots over the surface, the lip purple-brown, shading off into green behind, and the foliage marbled with dark and light green. A figure was given in our January number, p. 23, fig. 2.

Messrs. Sander and Co., St. Albans, exhibited a group containing several fine things, and received a Silver Banksian Medal. Noteworthy were Cypripedium × Massaianum (C. superciliare ♀ × C. Rothschildianum ♂), mentioned in last report, p. 255, and remarkable as being the first hybrid from C. Rothschildianum; C. × Umlauftianum (C. Lawrenceanum ♀ × C. insigne Chantini ♂), a bold flower with white and green upper sepal and deep brown lip; C. × Fausianum (C. × Dauthieri ♀ × C. × calophyllum ♂), noticeable for a circular upper sepal and deep brown-purple lip; and Cattleya Batalini, a supposed natural hybrid between C. intermedia and C. bicolor, with lilac sepals and petals and a deep purple lip. Other plants were Cypripedium × Youngianum, which certainly improves with time, C. × Lawre-conco, a hybrid Selenipedium from S. × albanense ♀ and S. reticulatum ♂, and Miltonia Roezlii.

Messrs. B. S. Williams and Son, Upper Holloway, received a Silver Banksian Medal for a group of Orchids, among which were Cattleya Aclandiæ, Oncidium Gardneri, Paphinia cristata, Cypripedium × Morganiæ, Odontoglossum Harryanum, and Zygopetalum (Pescatorea) Dayanum.

On August 8th, several noteworthy exhibits found their way to the Drill Hall, from all parts of the country.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), was awarded a Silver Banksian Medal for a group of choice plants; among them being Aganisia ionoptera with sixteen expanded flowers, to which a Botanical Certificate was given; Cypripedium × œno-superbiens, a strong hybrid with large deep purple-blotched upper sepal, which received an Award of Merit; C. × Harrisi-froyæ with white and green upper sepal, spotted and lined with brown; the deep purple-lipped Laelio-cattleya ; × Philbrickiana (Cattleya Aclandiæ ♀ × Lælia elegans ♂); Lælio-cattleya elegans Turneri "Purple Prince"; Lælio-cattleya × Blessensis (Lælia pumila ♀ × Cattleya Loddigesii ♂), a plant with flowers very much like Lælia pumila; Miltonia spectabilis, with large flowers; a fine spike of Aërides Lawrenceæ Sanderiana, and one of Schomburgkia Lyonsii, which latter, however, bore white abnormal flowers speckled with crimson.

Major Joicey, Sunningdale Park, Sunningdale (gr. Mr. F. J. Thorne), exhibited, I think for the first time, and was successful in obtaining a First-class Certificate, for Miltonia Joiceyana, a plant with two spikes of large deep yellow flowers blotched with deep brown, and having a fiddle-shaped mauve and lilac lip. The flowers are very much like those of M. Clowesii, but larger. A Cultural Commendation was granted to a fine strong specimen of Vanda Sanderiana, which came from the same place, with flowers of Cattleya granulosa Schofieldiana.

R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, S.E. (gr. Mr. H. Chapman), exhibited a strong example of the pale yellow and crimson speckled Masdevallia Lowii, which was certificated in 1890; also a dark variety of Cypripedium × Youngianum, and of C. × Numa superba.

A Botanical Certificate was awarded to Earina suaveolens, a pretty little sweet-scented New Zealand Orchid with white flowers, sent by F. W. Moore, Esq., F.R.H.S., from the Royal Botanic Gardens, Glasnevin, the home of so many rare things.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited flowers of the beautiful Lælio-cattleya × Schilleriana Johnsoni, and Lælio-cattleya × elegans.

W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffs. (gr. Mr. W. Stevens), exhibited large flowers of a charming Lælia tenebrosa—Walton Grange variety. It was a really fine thing, having clear light yellow sepals and petals, and a white lip with a deep crimson purple blotch in front, from which conspicuous lines ran into the throat. A First-class Certificate was granted to it. Flowers of the yellow and crimson-crested Oncidium spilopterum were also shown.

From the Royal Gardens, Windsor, Mr. Owen Thomas sent a fine strong specimen of Saccolabium Blumei majus, bearing a spike over eighteen inches in length.

A Silver Banksian Medal was awarded to Messrs. F. Sander and Co., St. Albans, for a group, including Vanda Sanderiana, Cypripedium × Youngianum, Aërides Sanderianum, A. Ballantineanum aureum, a yellow-flowered variety, Grammatophyllum Fenzlianum, and the purple-flowered Calanthe Sanderiana. Besides these, a plant of Cypripedium × Thayerianum (C. Lawrenceanum ♀ × C. Boxalliatratum ♂) with deep purple flowers and blotched petals received an Award of Merit.

Messrs. J. Veitch and Sons, King's Road, Chelsea, exhibited Lælio-cattleya novelty (Lælia pumila Dayana ♀ × Lælio-cattleya × elegans ♂), which received an Award of Merit. The sepals and petals were purple, the tubular lip being of a deep velvety crimson.

CORRESPONDENCE, &c.

Reginald Young, Esq., Sefton Park, Liverpool, sends several very beautiful flowers:—1 is Lælio-cattleya elegans var. Turneri; 2 and 3, Lælio-cattleya × Schilleriana, but one form much larger than the other, and very beautiful. Cattleya velutina and Epidendrum vitellinum majus are also included, the latter a very fine form. It is grown cool, shaded, and in a moist atmosphere, as this species always should be.

Cypripedium × Paris is believed to have been raised from C. bellatulum and C. Stonei, and may have been one of the late Mr. Hall's seedlings. There may be a little doubt in the matter, but it does not seem likely that C. callosum was the second parent.

Cypripedium × Cowleyanum was raised in the collection of Mr. Tautz, from C. Curtisii and C. niveum. See *Gard. Chron.*, 1892, i. p. 73.

J. B. H., Mossley Hill, Liverpool. The flower is Lælio-cattleya × Schilleriana var. euspatha, a very good form.

J. Johnson, Great Grimsby. The Oncidium Kramerianum is a very fine and handsomely coloured form.

Aërides Lawrenceæ. Two fine plants of this are flowering in the collection of Sir Trevor Lawrence, Bart., as we learn from Mr. W. H. White, one of them carrying nine spikes with about 200 flowers. The variety Sanderianum also carries four spikes, and nearly 120 flowers.

Sobralia xantholeuca. Three flowers have been received from Mr. W. Holmes, gardener to G. Hardy, Esq., Pickering Lodge, Timperley, one of them a beautiful light variety, with cream-coloured sepals and petals; lip normal in character. A handsome pink form also sent is probably S. Lucasiana, which is not yet very well known.

A. Van Imschoot, Ghent, sends several very interesting Orchids, including Anguloa eburnea, Ada Lehmanni, Odontoglossum Imschootianum, a supposed natural hybrid between O. tripudians and O. Lindleyanum, Lælia monophylla, Grobya Amherstiæ, Epidendrum tampense, Lycaste Schilleriana, and several others. No. 9 is Epidendrum fallax, Lindl.

Lælio-cattleya × Proserpine. Messrs. James Veitch and Son send a flower of this charming little hybrid, derived from Lælia pumila Dayana and Cattleya velutina. It most resembles the former, but is modified both in shape and colour.

W. L. L. and Co., Southgate. The Cattleya Dowiana aurea sent is a fine form with very dark lip, but we have seen it before, also the red markings at the tip of the petals.

W. V. Not all white Sobralias with yellow lips are S. macrantha Kienastiana. The very fact of there being an importation of it shows it to be different. Albinos of coloured species are almost invariably very rare.

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Vol. I.] OCTOBER, 1893. [No. 10.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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The Editors invite short communications on interesting subjects, also portraits, etc., of rarities.

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THE ORCHID REVIEW.

VOL. I.] *OCTOBER*, 1893. [No. 10.

NOTES.

THE sensation of the month has undoubtedly been the appearance of a new and exceptionally beautiful species of Cypripedium, introduced by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, to which the name of C. Charlesworthii has been given. It belongs to the group of C. insigne and C. Spicerianum, but has the dorsal sepal of a beautiful light rose tint, a most unusual feature, and one which gives to it an additional value as a decorative plant. It is evidently an autumn-bloomer. A plant with two flowers was exhibited at the meeting of the Royal Horticultural Society, on September 26th, and unanimously awarded a First-class Certificate. Further particulars are given in another column.

In the September number of the *English Illustrated Magazine* appears a paper entitled "Mr. Chamberlain's Orchids," accompanied by illustrations, taken from photographs, of several of the more popular species, together with portraits of the Right Hon. gentleman himself, and his Orchid-grower, Mr. H. A. Burberry. It is written in popular style, and contains some interesting information, though one very curious blunder occurs.

Speaking of Cattleya × guatemalensis, of which the Highbury plant is said to be the only one in England, the reader is referred to the illustration, in order, we suppose, that he may know what manner of plant it is. Alas! the illustration shows a plant of Odontoglossum citrosmum; not the plant for which Mr. Chamberlain paid fifty guineas a short time ago, which is the Epicattleya × guatemalensis described at page 134 of our May issue. We also note that the flower of Oncidium Papilio is represented upside down.

Of Sobralia Cattleya, which has never been known to flower in England, we read, that "at Highbury every possible attention has been given to it for twelve years; it has a splendid position under the glass, and Mr. Burberry

cherishes a strong hope that one of these fine days the sun's rays will draw forth the hidden flower."

A paper on "Abnormal Cypripedium Flowers," by Miss Ewart, appears in the last issue of the *Journal of the Linnean Society*, with drawings and analyses of a monstrous flower of Cypripedium Boxallii and one of Selenipedium × Sedeni.

Sir Trevor Lawrence, Bart., of Burford, Dorking, President of the Royal Horticultural Society, has been elected one of the four "Présidents d'Honneur" of the Orchidéene, of Brussels.

Two meetings of the Royal Horticultural Society will be held during October at the Drill Hall, James Street, Westminster, on the 10th and 24th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

Cattleya Alexandræ is now flowering in various collections, and although the plants are not yet established, the growths not being nearly equal to imported ones, it is evidently a very promising addition to the genus, and when fully established we may expect to see the racemes with numerous flowers, as in the wild specimens, where at least ten have been observed. It is very variable in colour, as some forms are rosy purple throughout, while others have bronze or even dark purple-brown sepals and petals.

A magnificent display of the old Cattleya labiata may be expected in our collections during the next few weeks, as the plants have made good growths, and numerous healthy sheaths. Already a few flowers have expanded, and we shall soon have an opportunity of observing its range of variation, which is certainly considerable, though white forms seem much less common than we were led to expect. Its re-discovery is certainly one of the most important events of recent years.

OBITUARY.

It is with deep regret that we have to announce the death of Mr. Hugh Low, one of the partners of Messrs. Hugh Low and Co., of the Clapton Nursery, which took place suddenly at Upper Clapton, on Sunday, September 17th, of pneumonia. Mr. Low was in his 32nd year, and was a member of the Orchid Committee of the Royal Horticultural Society. The funeral took place on September 20th, at Abney Park Cemetery.

HISTORY OF ORCHID HYBRIDISATION.

PART IX.

(*Continued from page* 263.)

A HYBRID Thunia flowered for the first time in 1885, but had been previously overlooked. Curiously enough, the same hybrid was raised by two different operators—first by the late Mr. Toll, of Manchester, and shortly afterwards by Mr. Seden, in both cases from T. Marshalliana ♀ and T. Bensoniæ ♂. Plants in flower were exhibited simultaneously at one of the Royal Botanic Society's shows in 1885, the former under the name of T. × Wrigleyana and the latter as T. Veitchiana. Under the latter name the hybrid was eventually described. It is quite intermediate in character.

Cypripedium × Buchanianum was raised in the collection of the late H. J. Buchan, Esq., of Southampton, by Mr. T. Osborne, from C. Druryi ♀ and C. Spicerianum ♂, and flowered for the first time about the end of 1887. The characters of the seed parent decidedly preponderate in the hybrid, which is an attractive little plant.

The most noteworthy hybrid of 1890 was Epiphronitis × Veitchii, a new generic cross, raised from Sophronitis grandiflora crossed with the pollen of Epidendrum radicans—the two parents, as is well known, being remarkably dissimilar, both in size and habit. The hybrid is like a very much dwarfed edition of the latter with an enlarged flower, for, singularly enough, there is very little trace of the Sophronitis parentage, except in the characters just named, and the somewhat darker colour. Were its parentage not known, it might easily be passed over as an Epidendrum, for the convolute side lobes of the lip of Sophronitis are quite unrepresented in the hybrid. It has the brilliant colour of its two parents. It was exhibited at a meeting of the Royal Horticultural Society on June 24th of that year, by Messrs. James Veitch and Sons, of Chelsea, and received a First-class Certificate. Mr. Seden was the raiser.

A second Sophro-cattleya also appeared in 1890, in the same establishment. As in the preceding instance, Sophronitis grandiflora was the seed-bearer, but Cattleya Harrisoniæ is recorded as the pollen parent. The flower is large, the sepals and petals bright rose-purple, and the lip much like that of the Cattleya parent, both in shape and colour, except that it is darker in front. It is more distinct from Sophro-cattleya × Batemaniana than would *à priori* have been expected, seeing that that had the allied Cattleya intermedia as the pollen parent. It is a very elegant little plant, and was described as Sophro-cattleya × Calypso.

The first hybrid Odontoglossum also flowered during 1890, and the event was a particularly interesting one for several reasons. Although so much success had attended the experiments made with several other popular general Odontoglossum had proved singularly intractable in this respect.

Seed had previously been obtained and young seedlings raised, though the majority of them had died without flowering. It was M. Leroy, gardener to Baron Edmond de Rothschild, of Armainvilliers, near Paris, who first attained success. About the end of 1884, he had fertilised Odontoglossum crispum with the pollen of O. luteo-purpureum, the result being the production of several seedlings, one of which produced a raceme of five flowers in May, 1890, when it received the name of O. × Leroyanum. O. × Wilckeanum, however, has always been supposed to be a natural hybrid derived from this parentage, and on comparing the two together, it is obvious that O. × Leroyanum is only a form of this polymorphic plant, whose supposed parentage is thus confirmed—a matter of both horticultural and scientific interest.

Phaius × Cooksoni was raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from P. Wallichii ♀ and P. tuberculosus ♂. Although not the first hybrid raised from Phaius, it was the first with pure Phaius parentage, as the earlier seedlings were generic crosses between Phaius and Calanthe. Phaius × Cooksoni is a very handsome hybrid, most resembling the seed parent in general character, but the lip is more open, and the spur nearly obsolete, both of which characters show the influence of the pollen parent. The cross was effected in February, 1887, the seed sown in the following December, and the flowers expanded in March, 1890, so that it arrived at the flowering stage in the short space of two and a quarter years from the time the seed was sown.

Three very interesting Lælio-cattleyas appeared in the establishment of Messrs. James Veitch and Sons, at Chelsea, as the result of Mr. Seden's experiments, and these may next be noticed.

Lælio-cattleya × Proserpine is a very distinct and pretty little plant, derived from Lælia pumila Dayana ♀ and Cattleya velutina ♂, and thus was the first hybrid derived from the latter. The seed was sown in 1883, and the plant flowered for the first time in August, 1890, when it received an Award of Merit from the Royal Horticultural Society. In shape the flower most resembles the pollen parent, but is considerably modified in colour.

Lælio-cattleya × Hippolyta was derived from Lælia cinnabarina crossed with the pollen of Cattleya Mossiæ. It is nearly intermediate in character, and the flower is of a beautiful Indian yellow colour. It received a First-class Certificate from the Royal Horticultural Society on March 25th, 1890.

Lælio-cattleya × eximia, which was the first hybrid derived from Cattleya Warneri, is a very beautiful hybrid, which also received a First-class Certificate from the Royal Horticultural Society, on June 24th, 1890, when exhibited by Messrs. Veitch. Lælia purpurata was the pollen parent.

Lælio-cattleya × Canhamiæ was derived from Cattleya Mossiæ ♀ and Lælia purpurata ♂, and thus has the reversed parentage of L. × Canhamiana, of which it may be considered a variety. It also was raised by

Messrs. Veitch. The sepals and petals are pale lilac and the lip mottled with purple.

Lælia × juvenilis is a very pretty little hybrid raised by M. Alfred Bleu, of Paris, from Lælia Perrinii crossed with the pollen of L. pumila. It is quite intermediate in character.

Zygopetalum × crinito-maxillare was raised by Mr. Hill, gardener to Lord Rothschild, Tring, and was exhibited at a meeting of the Royal Horticultural Society on July 8th, 1890, when it received an Award of Merit. Its parentage is indicated in the name, and thus would appear to be a variety of *Z.* × Clayi (p. 67).

Three hybrid Masdevallias appeared in 1890, which may now be mentioned.

Masdevallia × Stella was raised by Captain Hincks, of Thirsk, Yorkshire, from M. Estradæ ♀ and M. Harryana ♂, two species which belong to quite different sections of the genus. It is quite intermediate in character, the shape being most like M. Estradæ, while in colour and in its elongated scapes it most resembles the pollen parent.

Masdevallia × Measuresiana was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from M. tovarensis ♀ and M. amabilis ♂, and was named in compliment to R. I. Measures, Esq., of Camberwell. In the shape and colour of the flower it closely resembles the mother plant, the influence of the pollen parent being most seen in the terete peduncles and longer tails of the lateral sepals.

Masdevallia × Amesiana was exhibited by Messrs. F. Sander and Co., of St. Albans, at a meeting of the Royal Horticultural Society on August 12th, 1890. The parentage is recorded as M. Veitchiana ♀ and M. tovarensis ♂, and the flowers are said to be apricot-coloured.

Dendrobium × Venus is a very handsome hybrid raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from D. Falconeri ♀ and D. nobile ♂. It is far more robust than the mother plant, which it most resembles in the flower, except that the characteristic yellow disc of that species is nearly absent in the hybrid.

Dendrobium × Cassiope was also raised in the same collection as the preceding. It was obtained by crossing D. moniliforme (D. japonicum) with the pollen of D. nobile albiflorum. It is a very neat and floriferous little plant, with pure white flowers, the disc of the lip being adorned with a clear maroon-purple blotch on the disc.

Three hybrid Dendrobiums were exhibited by Sir Trevor Lawrence, Bart., at a meeting of the Royal Horticultural Society on January 14th, 1890, and each received a First-class Certificate. They were as follows:—

Dendrobium × xanthocentron has the flowers lightly flushed with rose, darker at the tips of the segments, and the disc of the lip orange. It bears

some resemblance to D. × Schneiderianum (p. 133). D. Findlayanum is said to have been one parent, but the other is not recorded.

Dendrobium × Juno is said to have been derived from D. Wardianum and D. Linawianum. It is compared with D. nobile, with the addition of some yellow on the disc on the lip.

Dendrobium × Luna has white flowers with pale pink tips to the segments, and some sulphur-yellow at the base of the lip. D. Findlayanum and D. × Ainsworthii are recorded as the parents.

The remaining hybrids of the year were all Cypripediums, and may now be considered. The first three were the work of operators not previously mentioned.

Cypripedium × Aylingi was raised by Mr. Ayling in the collection of A. J. Hollington, Esq., Forty Hill, Enfield, from C. niveum ♀ and C. ciliolare ♂, and flowered for the first time when about six years old. It is a very beautiful little hybrid, most resembling the seed parent.

C. × Vipani was raised in the collection of Captain Vipan, Stibbington Hall, Wansford, from C. philippinense ♀ and C. niveum ♂. It is a charming little plant, in which the characters of the pollen parent decidedly preponderate.

C. × Arnoldianum is a very interesting plant. It is said to have flowered in the quickest time on record for a Cypripedium, namely, in less than two years, and to have been the first distinct hybrid of American origin. It was raised by Mr. Joseph Manda, jun., of Short Hills, New Jersey, from C. superbiens and C. concolor, but it is not recorded which was the seed parent.

Five hybrids appeared in the collection of D. O. Drewett, Esq., Riding Mill-on-Tyne, by Mr. Keeling, as follows :—

C. × Northumbrian is a secondary hybrid, raised from C. × calophyllum ♀ and C. insigne Maulei ♂, and is said to bear a considerable resemblance to C. × Crossianum.

C. × Elinor was derived from C. × selligerum ♀ and C. superbiens ♂, and is said to be fairly intermediate in character.

C. × Alfred was obtained by crossing C. venustum with the pollen of C. philippinense, and is said to be a brightly coloured and pretty hybrid.

C. × Alice was derived from C. Stonei ♀ and C. Spicerianum ♂, and bears a two-flowered scape of light-coloured flowers.

C. × Constance was obtained by crossing C. Stonei with the pollen of C. Curtisii, and also bears a two-flowered scape of delicately-coloured flowers.

Five others are credited to Messrs. James Veitch and Sons, of Chelsea :—

C. × Niobe is a very handsome hybrid, derived from C. Spicerianum ♀ and C. Fairieanum ♂, between which it is quite intermediate. The seed was sown in 1884. It is figured at p. 7, fig. 1.

C. × Othello was derived from C. hirsutissimum ♀ and C. Boxallii ♂, and is thus the reverse cross of C. × Godseffianum (p. 259). It was exhibited at a meeting of the Royal Horticultural Society on March 11th, 1890.

C. × Numa was obtained by crossing C. Lawrenceanum with the pollen of C. Stonei, between which it is fairly intermediate.

C. × H. Ballantine was derived from C. purpuratum ♀ and C. Fairieanum ♂. It is a very pretty little plant, in which the characters of the pollen parent are well represented.

C. × Antigone is a handsome hybrid, derived from C. Lawrenceanum ♀ and C. niveum ♂, and thus is the reversed cross of C. × Aphrodite (p. 262), but is more robust in habit.

Three others appeared in the collection of Messrs. F. Sander and Co., of St. Albans :—

C. × Œnone was derived from C. Hookeræ ♀ and C. superbiens ♂, between which it is quite intermediate in character.

C. × Youngianum was obtained from C. superbiens ♀ and C. philippinense (Roebelenii) ♂. It is a handsome hybrid, about intermediate in shape and colour.

C. × Eyermanianum was derived from C. barbatum ♀ and C. Spicerianum ♂, and is generally intermediate in character.

From the collection of R. H. Measures, Esq., The Woodlands, Streatham, appeared the two following :—

C. × Cythera was derived from C. Spicerianum ♀ and C. purpuratum ♂, and most resembles the former.

C. × Hera was derived from C. Spicerianum ♀ and C. villosum ♂, and thus must be a variety of C. × Lathamianum (p. 227), which has the same parentage.

C. × Apollo was exhibited at a meeting of the Royal Horticultural Society on April 22nd, 1890, by R. I. Measures, Esq., of Cambridge Lodge, Camberwell, in whose collection it was presumably raised. C. × vexillarium and C. Stonei are recorded as the parents.

C. × Doris was raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, by Mr. Murray, from C. venustum ♀ and C. Stonei ♂. The characters of the seed parent largely preponderate in the hybrid.

C. × Desboisianum appeared in the collection of MM. Edm. Vervaet et Cie., of Mont-St.-Amand, Ghent, and was obtained by crossing C. venustum with the pollen of C. Boxallii atratum, and well combines the characters of its two parents.

(*To be continued.*)

CULTURE OF ONCIDIUM CRISPUM AND ITS ALLIES.

It has always been a matter for regret that the beautiful Oncidium crispum and its allies from the Organ Mountains have proved so intractable under cultivation, being imported in thousands to display their splendid inflorescences for one or a few times, and then dwindle away. What is the cause of this? It is not so in their native homes. Is there, then, some particular condition which we cannot imitate in our houses, or do we persist in treating them wrongly, or in other words unnaturally? Almost certainly it is the latter, as a few growers have succeeded in keeping them healthy and floriferous for long periods. We think of them as Brazilian Orchids, and accordingly place them in heat, oblivious of the fact that they grow at 5,000 feet elevation, in a cooler climate than the Cattleyas and Lælias popularly supposed to come from the same region. In fact, they grow in a temperate climate, and are almost as impatient of being stewed in a hot close atmosphere as Odontoglossums. They succeed best under cool treatment with plenty of air, and may be grown on blocks or in well-drained shallow pans, with a moderate supply of fibrous peat and moss, as they do not like their roots too much covered. Give them as much light as possible, shading from strong sun, and never allow them to become dry. During the growing season liberal supplies of water are necessary. By these means good growths may be ensured, and the rest follows naturally. One other hint. Do not let the spikes remain on the plants too long. It is useful to remember that O. crispum, Forbesii, Marshallianum, dasytyle, and indeed most of the Organ Mountain Oncidiums grow under practically the same conditions.

CATASETUM MACULATUM ♀.

The female flowers of another species of Catasetum have appeared, making nineteen of which both sexes are now known. About a year ago a plant of Catasetum maculatum, bearing a raceme of male flowers, was presented to Kew by Messrs. F. Sander and Co., of St. Albans, and now it has produced a raceme of female ones, five in number. They are light green, with a few blackish spots, in which respect they bear some resemblance to the males, but in structure they agree with the females of other species, having a stout column, without pollen or antennæ. Their occurrence is a matter of great interest, as the males have been known for upwards of seventy years.

Catasetum maculatum, *Kunth. Syn. Pl.*, i., p. 331.

CYPRIPEDIUM × VEXILLARIUM.

THIS beautiful hybrid, as was pointed out at p. 35, was raised by Mr. Dominy, in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Cypripedium barbatum ♀ and C. Fairieanum ♂, and flowered for the first time as long ago as the autumn of 1870. In fact, excluding the allied genus Selenipedium, it was the second hybrid Cypripedium raised; and it is still one of the most beautiful. It presents an unmistakable combination of the characters of its two parents, though in some respects the pollen parent seems to have exerted a preponderating influence. It is a plant of dwarf habit, with tessellated leaves. The dorsal sepal is vinous purple with

Fig. 15. CYPRIPEDIUM × VEXILLARIUM.

dark purple veins, except at the extreme base, where the colour is green. The petals are somewhat similar in colour, except on their basal part, which is green with a purple margin. The lip is reddish-brown in front, much paler behind. It is interesting to compare it with the three other C. Fairieanum crosses figured in this work, C. × Niobe (p. 7), C. × Edwardii (p. 23), and C. × Arthurianum (p. 305). In each case C. Fairieanum was the pollen parent, the seed parents being C. Spicerianum, C. superbiens, and C. insigne, respectively. C. × vexillarium received a First-class Certificate from the Royal Horticultural Society, in January, 1871. Our illustration,

which is considerably reduced, is from an excellent photograph taken by Mr. G. I'Anson, of Upper Clapton.

Cypripedium × vexillarium, Rchb. f. in *Gard. Chron.*, 1870, p. 1373; *id.*, 1880 i. pp. 780, 781, fig. 135 ("selligerum" by error); *id.*, 1887, i. p. 456, fig. 87; *Veitch Man. Orch.* iv., p. 100, with fig.; *Lindenia*, vii., p. 45, t. 309; *Orchid Album*, x., t. 447.

HYBRID ONCIDIUMS.

THE group of Oncidiums which includes O. crispum, Forbesii, and Marshallianum, to which Lindley gave the name of Tetrapetala macropetala, is one of the most popular in gardens, and lately it has received a considerable amount of attention. As regards nomenclature, the group is a rather difficult one. A few of the species are very well marked, though some curious intermediate forms occur, and it is becoming increasingly evident that some of these are of hybrid origin. The Organ Mountains seem to be the headquarters of the group, at least so far as our knowledge at present extends, and it is from this region that these intermediate forms have chiefly appeared.

As long ago as 1880 Reichenbach remarked of his O. præstans, "there is little doubt of this being a mule between Oncidium dasytyle and some species like Gardneri," and since then O. litum, O. Pollettianum, O. Martinii, and O. Larkinianum have all been suspected to be of hybrid origin. And there are two or three others, described as species, which I believe will fall into the same category, as will presently be pointed out.

The chief considerations with regard to natural hybrids generally have already been pointed out under Hybrid Odontoglossums (p. 142), and need only be briefly recapitulated here. In the first place, they only occur where species capable of inter-crossing occur in close proximity to each other. Secondly, they almost invariably present a distinct combination of the characters of the parent species, sometimes being fairly intermediate, at others inclining towards one or the other parent in particular organs. Thirdly, as compared with the parent species, they are almost invariably very rare. And, fourthly, individuals derived from the same two species, and even from the same seed-pod, vary considerably between themselves, especially when the parents are very diverse; thus very different looking plants may yet have the same parentage, or, in other words, hybrids of the same parentage are generally much more variable than the species from which they are derived.

A considerable number of species of Oncidium grow in the Organ Mountains, and probably a good proportion of them could be hybridised together under favourable circumstances. In the particular group now under consideration may be mentioned—O. Forbesii, O. Marshallianum, O.

crispum. and O. dasytyle, among the well-known and common species: while among the rarer forms are O. curtum, O. pectorale, O. Gardneri, O. elegantissimum, and O. caloglossum. The four last named, though described as species, are all, I believe, of hybrid origin.

We may now consider these hybrids individually, grouping them under the joint names of the parent species, as in the case of Odontoglossum.

ONCIDIUM × MARSHALLIANO-FORBESII.—As long ago as 1840 a plant was described by Lindley under the name of O. pectorale, which I believe is a natural hybrid derived from O. Forbesii and O. Marshallianum, and it is a somewhat curious fact that the last-named species was not known until a quarter of a century afterwards. Three other forms are all, I believe, derived from the same parentage, namely, O. caloglossum, O. Mantinii, and O. Larkinianum.

Oncidium × pectorale appeared in the collection of James Wentworth Buller, of Exeter, in April, 1840. It was imported from Rio de Janeiro, with O. Forbesii, which it was said to resemble in habit. It has yellow flowers, the sepals barred with reddish brown, and the petals with a large similarly-coloured disc and some small marginal dots. The lip is yellow, and the crest consists of numerous scattered rounded tubercles. The latter organ was compared with an old-fashioned ladies' stomacher, studded with little knots, in allusion to which the name was given. The column-wings are yellow, spotted with red.

Oncidium × caloglossum appeared with Mr. W. Bull, of Chelsea, in 1885, and was described by Reichenbach, who compared it with O. × pectorale, of which I believe it is only a variety. It chiefly differs in having some brown blotches in front of the lip, probably derived from O. Forbesii. A very similar form has recently appeared with Messrs. B. S. Williams and Son, of Upper Holloway, which is said to have been imported with O. concolor, a native of the same region, but which has evidently no share in its parentage.

Oncidium × Mantinii appeared in 1887, in the horticultural establishment of M. Truffaut, at Versailles, whence it passed into the collection of M. Georges Mantin, of Olivet, near Orleans. It was acquired from M. Binot, an Orchid collector at Petropolis, in Brazil, it is believed in an importation of O. crispum. M. Godefroy Lebeuf, who described it, thought it might be a natural hybrid between O. Marshallianum and O. Gardneri, or possibly O. sarcodes. The former is evident enough, but the other parent was evidently O. Forbesii, as the shape and colour of the sepals and petals, the presence of a number of scattered red spots on the lip, the shape of the crest, and the spotted column-wings all clearly indicate.

Oncidium × Larkinianum appeared in the collection of J. Larkin, Esq., of Aldenham, near Watford, and is unmistakably derived from O. Marshallianum and O. Forbesii, the features of both parents being unusually well

defined. Mr. Gower remarked that "by its flowers one might be led to suppose that O. Gardnerianum (*sic*) and O. Marshallianum had something to do with its parentage, as the sepals and petals resemble those of the former plant, and the lip the latter; but no indication is found in the pollen masses of its being a hybrid,[1] and indeed we are not such believers in natural hybrids as some of our fellow Orchid-growers appear to be." I should describe it as having the habit and lip almost of O. Marshallianum, though both somewhat modified, with the sepals and petals of O. Forbesii. The reason of the resemblance to O. Gardneri will be apparent when we come to consider the next hybrid.

The foregoing remarks indicate pretty clearly, not only the variability of this hybrid, but also the way in which the characters of the parent species are combined in it. The vegetative organs, though generally intermediate, incline sometimes to those of the one parent, sometimes to those of the other; and the same may be said with respect to the flower. Thus O. × pectorale has almost the lip and crest of O. Marshallianum, and the column-wings of O. Forbesii. O. × caloglossum differs in having some of the spots of O. Forbesii round the front margin of the lip. In O. × Mantinii a few spots occur over the entire surface, while the crest, the column-wings, and the sepals and petals also show a very decided approach to O. Forbesii. Lastly, O. × Larkinianum has the clear yellow column-wings and lip of O. Marshallianum, with the sepals and petals of O. Forbesii.[2]

The following are the different forms of this hybrid, with references to descriptions and figures:—

Oncidium × pectorale, *Lindl. Sert. Orch.*, t. 39; *id. Fol. Orch., Oncid.*, p. 20; *Veit. Man. Orch.*, viii. p. 68.

O. × caloglossum, Rchb. f. in *Gard. Chron.*, 1885, ii. p. 166.

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[1] The value of this character as a test of hybridity has been greatly overrated. In many known hybrids I have found the sexual organs apparently as perfect as in the parent species; and that appearances are not always deceiving is proved by the fact that many hybrids have yielded offspring, both when used as the seed and pollen parents. And there are secondary hybrids both of whose parents have been themselves of hybrid origin.

[2] Hybrids are very rarely precisely intermediate between their two parents in every respect. The converse would indicate a complete fusion of the particles derived from each, under which circumstances scarcely any variation would result. In fact, they may be compared to a mosaic, composed of particles derived from the parent species, often only partially fused together, and sometimes rather unequally mixed; which is probably due to the greater affinity of like particles for each other, and the consequent tendency of the originally distinct elements to again separate themselves. This irregular grouping of particles results in an ever-varying combination of the parental characters in the hybrid; in other words, a variation in the pattern in almost every different individual; hence the extreme variability of many hybrids. It seems necessary to emphasise this point, because several persons have expressed their disbelief that certain distinct-looking hybrids could possibly have the same parentage.

O. × Mantinii, Godefroy in *Orchidophile*, 1888, p. 47, with plate.
O. × Larkinianum, Gower in *Garden*, xxxvii. p. 325; *Orchid Album*, ix. t. 405.

ONCIDIUM FORBESIO-DASYTYLE.—In 1843 Oncidium Gardneri was described, and although universally considered as a species, I have little doubt it is a natural hybrid derived from O. Forbesii and O. dasytyle, two very different species. Here again we note the curious fact that one of the species, namely, O. dasytyle, was not known until many years afterwards, being described for the first time in 1873. O. elegantissimum and O. Pollettianum were probably derived from the same parentage, and possibly O. præstans also.

Oncidium × Gardneri was originally described by Lindley, in 1843, as a fine species allied to O. crispum and Forbesii, distinctly separated by the peculiar form and tuberculation of the lip, and by the very small wings of the column. It was collected on the Organ Mountains, in December, 1836, by Gardner, who states that he only found a single plant of it.[1]

In 1846 Messrs. Rollisson, of Tooting, received from M. Pinel, a botanist and collector of plants residing in Brazil, an Oncidium under the name of O. flabelliferum, which soon afterwards flowered, and was figured in *Paxton's Magazine of Botany*; though it is evidently only a form of O. × Gardneri, as Reichenbach pointed out in 1877, just after the true plant was introduced by Mr. B. S. Williams.

Another plant, which also appears to be a form of O. × Gardneri, appeared in the collection of M. Massange de Louvrex, at Baillonville, in 1877, and was figured as O. prætextum, though it is not Reichenbach's plant of that name. Messrs. Veitch remark of O. × Gardneri that "its appearance in British gardens at long intervals and in limited quantity would imply that it is a rare plant in its native country," which is quite explicable on the theory now put forward.

Oncidium × elegantissimum appeared with Messrs. James Veitch and Sons, of Chelsea, in 1876, and was described by Reichenbach as a new species. It was compared with O. curtum and O. Gardneri, being especially near the latter, with which it agrees in the shape of the lip and in having the calli of the base with blackish purple borders. It is probably only a variety of the same, in which the crest is rather nearer O. Forbesii.

Oncidium × præstans appeared in 1880, in the establishment of Messrs. James Veitch and Sons, of Chelsea, where it was found among a lot of O.

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[1] Curiously enough, Lindley named the original specimen in the Hookerian Herbarium, "O. Forbesii," though a sketch of it, with three dried flowers from the same specimen, in his own Herbarium, he labelled "O. Gardneri." He appears never to have known it properly, for three flowers of O. crispum, labelled "O. Forbesii," are attached to the same sheet; while O. flabelliferum, which is a form of O. × Gardneri, he placed among the "Species insufficiently known." Reichenbach also states that Lindley sent to him flowers of O. crispum labelled, "O. Gardneri."

dasytyle. Reichenbach remarked "there is little doubt of this being a mix between O. dasytyle and some species like Gardneri. It is far superior to the first, has brighter colour, and a system of calli far nearer that of Oncidium Gardneri." The second parent, however, is not very apparent, but I fail to find anything which agrees better with its characters than O. Forbesii.

Oncidium × Pollettianum appeared in the collection of H. M. Pollett, Esq., Fernside, Bickley, in 1886. Reichenbach, when describing it, suggested that it might be a natural hybrid between O. dasytyle and O. Gardneri. His description states that the flowers are equal to those of O. Gardneri, and the calli long, running from the base over the isthmus, dark brown-purple. Mr. Pollett stated that the bulbs and leaves were exactly those of Oncidium dasytyle, say a trifle larger. From this it is evident that O. dasytyle was one parent. The other is not so apparent, but from the description I think it must have been O. Forbesii. Messrs. Veitch consider it synonymous with O. pectorale, but that has evidently a different parentage.

Had any one suggested Oncidium Gardneri as being a natural hybrid a year or two ago I should have scouted the idea, but the conviction has been forced upon me by the examination of a series of forms, some of which as strongly resemble O. Forbesii in general character as others do O. dasytyle. Especially one which has flowered with Mr. Bull, of Chelsea, on two occasions, which is precisely O. × Gardneri without any spots, or only with the faintest indication of them, as if they were just fading away. This shows a considerable approach to O. dasytyle, and also helps to bridge over the gap which separates O. × Gardneri from O. × præstans, the most aberrant of the group.

This hybrid is evidently a very polymorphic one, as the following will indicate :—

Oncidium × Gardneri, Lindl. in *Hook. Lond. Journ. Bot.*, ii. p. 662 ; *id. Bot. Reg.* xxxiii. sub t. 66 ; *id. Fol. Orch., Oncid.*, p. 19 ; *Fl. Mag.*, n. s., 1880, t. 401 ; *Gard. Chron.*, 1881, ii. p. 86, fig. 23 (Gardnerianum) ; *Orchid Album*, i. t. 12 ; *Veitch Man. Orch.*, ed. 2, pp. 39, 40, with fig.

O. × flabelliferum, Pinel, ex *Paxt. Mag. Bot.*, xvi. p. 65, with plate, fig. 2 ; Rchb. f. in *Berlin. Allg. Gartenz.*, 1858, p. 379.

O. × prætextum, E. Morr. in *Belg. Hort.*, xxvii. p. 357, t. 20, 21 (non Rchb. f.).

O. × elegantissimum, Rchb. f. in *Gard. Chron.*, 1877, i. p. 13.

O. × præstans, Rchb. f. in *Gard. Chron.*, 1880, ii. p. 296

O. × Pollettianum, Rchb. f. in *Gard. Chron.*, 1886, ii. p. 326.

R. A. R.

(*To be continued.*)

NOVELTIES.

CYPRIPEDIUM CHARLESWORTHII, Rolfe.—A new and sensational species of Cypripedium has been introduced from the East Indies, by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, and has now flowered in their establishment for the first time. Hybridists have tried to get a Cypripedium with a rose-coloured dorsal sepal, and hitherto without success, while all the time a species with this character has been waiting to be discovered; and now that desirable event has taken place our gardens will be the richer. It belongs to the C. insigne group, but is so distinct that it is difficult to compare it with anything. Its leaves are linear-oblong and green, though on the under-side are many irregular purple-brown blotches and streaks. The scape is short, one-flowered, and the flower about the size of C. Spicerianum. The dorsal sepal is broad and flat, ultimately slightly concave, and of a beautiful light soft rose-colour, uniform throughout. The petals are spreading and not undulated, and the lip something like that of C. Druryi or exul in shape. The staminode is ivory-white, with an acute yellow tooth, in which respect, as in that of the dorsal sepal, it is quite unique in the genus. Botanically, it must be placed near C. Spicerianum, insigne and Druryi, though remarkably distinct from any of them. It is as unexpected as it is beautiful; and the Orchid Committee of the Royal Horticultural Society have just awarded it a First-class Certificate, which it richly deserved. It is dedicated to Mr. Charlesworth, the head of the firm who has been so fortunate as to discover and introduce it. The technical description must stand over for the present.

LYCASTE CINNABARINA, Rolfe.—This is a very beautiful Lycaste, which was discovered at the sources of the Marañon River, in Peru, as long ago as 1853, by Warscewicz, though, so far as can be traced, it has only now come into cultivation. Messrs. Linden, L'Horticulture Internationale, Brussels, have recently had a collector in this region, and the plant has now flowered among their importations. Lindley appears to have given it the name of Maxillaria cinnabarina, under which name it was included in the Catalogue of Warscewicz's sale, as "a new species, with pale yellowish green flowers and a rich apricot-coloured lip." This apparently relates, however, to the dried specimens, and not to living plants. The species is very nearly allied to L. mesochlæna, Rchb. f., of which an account was given at p. 72, and has similar short scapes, while the sepals and petals are almost identical, both in shape and colour. But the lip is totally different, being nearly entire instead of three-lobed, and of a deep apricot or light orange-brown tint, which forms an elegant contrast with the greenish white or nearly ivory-white sepals and petals. It must not be confounded with L. gigantea, Lindl., which has long scapes, and longer, more acute sepals and petals, in fact the

present one has much more effective colours, and once seen can never be mistaken, though a flower without the lip would pass for L. mesochlæna but for the different-shaped mentum. The front lobe of the lip is very slightly toothed on the sides, and the crest is much swollen, truncate, and of the same colour as the rest of the lip. The mentum, or chin, of the lateral sepals is rounded and three lines long.

CYPRIPEDIUM VILLOSUM VAR. MEASURESIANUM, O'Brien.—Described as a richly-coloured and bold-looking flower, forming a connecting link between Cypripedium villosum and C. Boxallii. It is like a fine form of typical villosum with the colouring of C. Boxallii atratum, "showing through it as one sees a design on a lighter ground in a stained-glass window." It appeared in the establishment of Messrs. F. Sander and Co., of St. Albans, and is named in honour of R. H. Measures, Esq., of The Woodlands, Streatham.—*Gard. Chron.*, Sept. 6th, p. 297.

ONCIDIUM WHEATLEYANUM, Gower.—A very beautiful Oncidium which appeared with Mr. F. Wheatley, of Ringmore, Teignmouth, having been purchased as an imported specimen with two or three others as Oncidium Gardneri. It bears a raceme of upwards of thirty flowers. The sepals and petals are marbled with reddish brown on a lighter ground, and the lip golden-yellow, edged with brown, and a deep crimson area at the base.—*The Garden*, Sept. 9th, p. 227.

MILTONIA SPECTABILIS VAR. VIRGINALIS.

This chaste and beautiful variety appeared in the collection of M. Ambrose Verschaffelt, at Ghent, in 1869. The flowers are pure white with the exception of a broad wedge-shaped purple blotch at the base of the lip, the purple column-wings, and a yellow spot at the base of the column. In every other respect it conforms to the type. The same identical form has now appeared with Messrs. W. L. Lewis and Co., Chase Side, Southgate, from whom we have received a flower. Miltonia spectabilis is the original species of the genus, and was described as long ago as 1837, yet very little is known about its habitat—in fact, Messrs. Veitch state that its precise habitat is known only to the Orchid collectors at Rio de Janeiro. It has proved very variable as regards colour, and is one of the most popular species in the genus.

Miltonia spectabilis var. virginalis, Lem. in *Ill. Hort.*, xv., t. 573.

CYPRIPEDIUM × ARTHURIANUM.

We are now able to present our readers with an illustration of a fourth hybrid derived from the rare and beautiful Cypripedium Fairieanum, namely, C. × Arthurianum, which was raised by Mr. Seden, in Messrs. Veitch's establishment. In this case C. insigne was the seed parent. A single seedling was raised, which flowered for the first time in 1874, when it was dedicated to the late Mr. Arthur Veitch. In this case the hybrid most resembles the mother plant, though the influence of the pollen parent is obvious enough, especially in the undulate petals and the veining of the dorsal sepal. The colour, however, is almost that of C. insigne. It is very

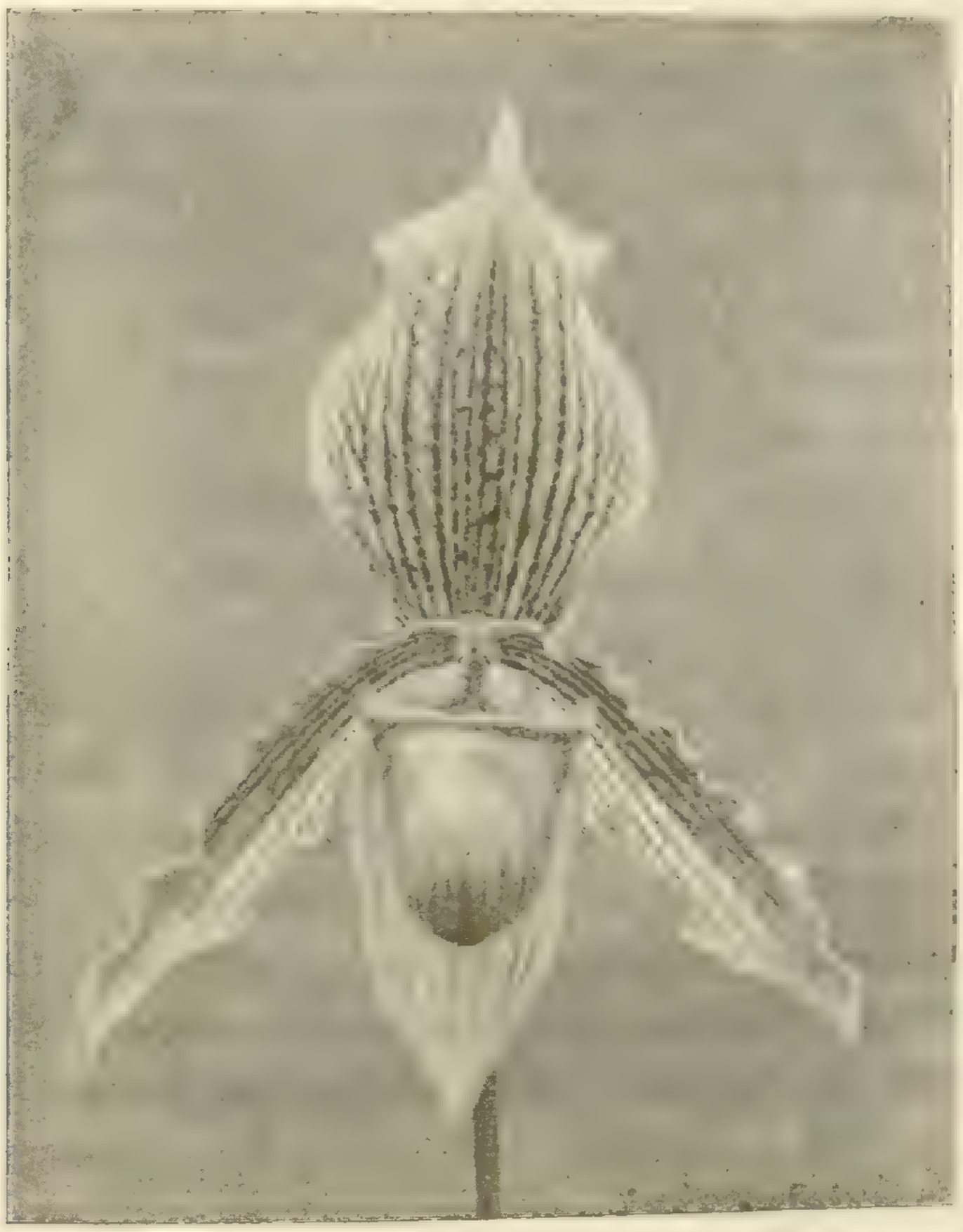

Fig. 16. Cypripedium × Arthurianum.

distinct and beautiful, and a robust grower, as a large stock of plants has been propagated from the original plant. It flowers during the autumn months. Two varieties have been described. First comes the variety pallidum, figured in *Lindenia* from a specimen in the collection of M. Jules Hye-Leysen, of Ghent. Nothing is stated about its origin, yet the figure is so different from all others that one cannot suppose it to be a subdivision of the original plant. The sepals and petals are regularly striped, not at all spotted, and there are no hairs on the latter, which suggests the idea that the drawing may not be correct. The variety pulchellum is a new cross, also raised by Mr. Seden, but from C. insigne Chantini instead of

typical C. insigne. It is said to differ chiefly from C. × Arthurianum typ in having some dark crimson spots on the dorsal sepal. Our illustrati from a photograph kindly sent by Mr. G. I'Anson, of Upper Clapto will be observed that the dorsal sepal is not nearly so much spotted as some of the published figures, yet the present one is an absolute *fac si* being done by photographic process throughout. We hope to be abl examine this point at the coming flowering period.

Cypripedium × Arthurianum, Rchb. f. in *Gard. Chron.*, 1874, ii. p. 676; *Veitch M Orch.*, iv. pp. 77, 78, with fig.; *Orchidophile*, 1887, p. 209, with plate; *Orchid Album.* 389.

Var. pallidum, *Lindenia*, iii., p. 53, t. 121.

Var. pulchellum, *Journ. Hort.*, 1892, ii. p. 499, fig. 66.

CULTURE OF VANDA AMESIANA AND V. KIMBALLIANA.

On several occasions we have found these two beautiful Vandas cultivated in the East Indian house, and it may therefore interest some of our readers to know that they succeed far better under cool treatment. In Messrs Hugh Low and Co's. establishment, at Upper Clapton, may be seen a large batch, in the most robust health, which have received no fire heat since the end of March last. In fact, they are grown like cool Odontoglots, except that less shading is necessary. They are now throwing up flower-spikes in profusion. If the weather is cold at this period a very little heat is an advantage, enabling them to mature the buds, but in mild weather this is unnecessary. Vanda cœrulea is grown with them, and with great success. Many growers complain that this plant will not succeed for many years together, but in the majority of cases it is because too much heat is given. In the Shan Hills these three species grow, together with Luisia Amesiana, at from 4,000 to 5,000 feet elevation, in a comparatively cool climate, where the ground is sometimes white with hoar frost. Again, in the Khasia Hills Vanda cœrulea grows and flowers profusely, at 5,000 feet altitude, where as much as eight or ten degrees of frost occasionally occur in the month of January. Too much heat is simply a drain on the constitution of these plants, and is not only unnecessary, but injurious, and therefore worse than useless. Those who have not been satisfied with their success under warm treatment should not hesitate to move them to cooler quarters, or at least part of their plants, and the remainder would probably soon follow. And let no one hesitate to include them in their collections because they have not a warm house, for they are naturally cool Orchids. We are led to make these remarks because we have never met with healthier or better-grown plants than the ones above mentioned.

THE HYBRIDIST.

Lælio-cattleya × Nysa.

In this we have a very handsome hybrid raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Lælia crispa ♀ and Cattleya Warscewiczii ♂. It is nearly allied to L. × exoniensis, sufficiently near, indeed, to prove that Lælia crispa was one of the parents of that hybrid, of which, according to existing records, there has been some doubt. Both of them, however, are strongly stamped with the characters of this species. The present hybrid has a larger flower than L. × exoniensis, and the front lobe of the lip is darker in colour, both of which are easily accounted for by the fact that this had C. Warscewiczii instead of C. Mossiæ for the other parent. This is exactly as it should be, and affords confirmatory evidence that Lælia crispa and Cattleya Mossiæ were the parents of L. × exoniensis. L. × Nysa is perhaps even more like L. × Veitchiana in colour, but that has smaller flowers, as would be expected from the fact that the old autumn-flowering C. labiata was the second parent. All were derived from Lælia crispa on the one hand; hence their undoubted affinity. L. × Nysa has large flowers of a beautiful light rosy-mauve, with the front lobe of the lip deep purple-crimson, much crisped, and edged with lilac, and some yellow on the disc. It received an Award of Merit from the Royal Horticultural Society on September 12th last.

Cypripedium × Sanderiano-superbiens.

This is the first hybrid derived from the remarkable Cypripedium Sanderianum, which was introduced to cultivation in 1886. C. superbiens is said to have been the pollen parent. The cross was effected by Captain Vipan, of Stibbington Hall, Wansford, and the seed was presented by him to Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, who raised the plants, one of which was exhibited by him at the Islington show of the Royal Horticultural Society on August 29th last, when it received an Award of Merit. In habit it much resembles C. × Morganiæ, though the influence of C. Sanderianum is less apparent than would have been expected. The dorsal sepal is longer and more acute than in C. superbiens, and only faintly striped, while the petals are also more acute, but spotted all over as in the same species. Probably the very long twisted petals of C. Sanderianum would have more influence if C. philippinense or some other species of the racemose group were used as the other parent.

Cypripedium × Fairieano-Lawrenceanum.

The beautiful Cypripedium Fairieanum has now been crossed with each of the three allied species, C. barbatum, C. callosum, and C. Lawrenceanum.

With the first it yielded the well-known and charming C. × vexillarium, with the second, the equally beautiful C. × Juno, and now the third one has appeared in the magnificent collection of R. H. Measures, Esq., of The Woodlands, Streatham. Naturally, they bear a family resemblance to each other, but the present one is the largest of the three. It might almost be described as a much enlarged edition of C. × vexillarium (whose portrait appears on page 297), with somewhat lighter colours, so great is the general resemblance between them. The dorsal sepal is two and a half inches broad by nearly two inches long, rather flat, light purple, with light green base and white margin, and closely veined with darker purple. The petals are quite pendulous, very slightly falcate, two and a half inches long, light purple, with paler disc and light green base, the darker nerves dotted with dark brown. The lip is purple-brown in front, paler behind, and the staminode nearly orbicular, with two incurved teeth in front, light olive-green with darker reticulation and pale margin. It was raised from C. Lawrenceanum crossed with the pollen of C. Fairieanum, and as Mr. Measures has expressed his preference for a name which indicates its parentage, the above name is proposed, the pollen parent being placed first, in accordance with the old rule, which seems to have recently been departed from. It is a most beautiful hybrid, and Mr. Measures expresses his opinion that it is best of the C. Fairieanum crosses.

Cypripedium × Edith Winn.

This is a very pretty hybrid, raised from Cypripedium Stonei crossed with the pollen of C. purpuratum, in the collection of Charles Winn, Esq., The Uplands, Selly Hill, Birmingham. It can best be compared with C. × euryandrum (C. barbatum ♀ × C. Stonei ♂), though it differs in many respects, as the following description will show. The scape at present is two-flowered. The dorsal sepal is much like that of C. Stonei in shape, light whitish yellow, with about eleven light purple stripes, which do not quite extend to either base or apex. The petals are nearly straight, four inches long by half an inch broad, blotched with purple-brown on a light ground, the nerves being light purple. The lip is much like a reduced one of C. Stonei, one and a half inches long, suffused with bright purple-brown in front, paler behind; and the staminode obovate-quadrate, convex, hairy at the sides, and the colour whitish yellow, slightly suffused with purple in the centre. Thus it will be seen that the characters of the seed parent decidedly preponderate in the hybrid, the influence of C. purpuratum being chiefly seen in the modification of various parts of the flower.

Cypripedium × Ganesa.

This is probably the first hybrid partly derived from Cypripedium Lawrenceanum Hyeanum, the rare white and green variety in which every

trace of purple has vanished from the flower. C. × Sallieri was the seed parent, the pollen being derived from the form just named. The ground colour of the flower is light green; the dorsal sepal is veined with olive-green except at the white margin; the petals suffused with shining purple-brown except at the base, and the lip suffused with a similar tint in front. In its general shape, the flower most resembles C. × Sallieri, though somewhat modified in the direction of the other parent. The staminode is semi orbicular, obscurely three-lobed in front. It was raised in the collection of R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Cypripedium × Eyermanianum var. Diana.

A very pretty hybrid was exhibited at a meeting of the Royal Horticultural Society on September 12th last, under the name of Cypripedium × Diana, which was raised in the same collection as the preceding: the parents being C. barbatum superbum ♀ and C. Spicerianum ♂. It was from these two species, however, that C. × Eyermanianum was raised. in the establishment of Messrs. F. Sander and Co., of St. Albans, and the present one is clearly a variety of the same. It chiefly differs in having a broader white margin to the dorsal sepal, with less distinct stripes, lighter coloured petals, and a rather smaller lip, in which respects it shows more of the influence of C. Spicerianum, whose characters decidedly preponderate in it. The influence of the mother plant is seen in the shorter dorsal sepal, striped on the lower half, the flatter, more spreading petals, and the deep purple-brown lip.

Cypripedium × enfieldense var. Hebe.

This also was raised in the collection of R. I. Measures, Esq., of Camberwell (gr. Mr. H. Chapman), from C. Hookeræ Measuresianum ♀ and C. Lawrenceanum ♂. It was exhibited at a meeting of the Royal Horticultural Society on September 12th last, under the name of C. × Hebe. That name, however, has been applied to a hybrid derived from C. Spicerianum ♀ and C. × Stonei ♂, the reverse cross of C. × Alice, while, on the other hand, C. × enfieldense was raised from C. Hookeræ ♀ and C. Lawrenceanum ♂, and the present hybrid must be considered a variety of the same. It can best be compared with C. × marmorophyllum, in which the allied C. barbatum was the pollen parent. The dorsal sepal is closely veined with dark green on a lighter ground, and strongly suffused with light purple near the margin. The petals are green in their lower part, blotched with brown, the upper part and margin purple. The lip is purple-brown in front, paler behind, and the staminode suffused with purple, except in the centre, which is reticulated with green on a greyish ground. It is a brightly-coloured and attractive hybrid.

CATTLEYA AQUINII.

Under this name M. Barbosa Rodriguez, Director of the Botanic Garden at Rio de Janeiro, has described a remarkable Cattleya, which he cites as confirming a theory which he has formulated, that an Orchid flower consists of twenty-four organs; namely, a calyx of six sepals, a corolla of six petals, and twelve reproductive organs. M. Rodriguez practically admits that it is a variety of Cattleya intermedia, yet he calls it a species, because he considers it to be a reversion to a primitive type. It is a native of Rio Grande do Sul, and was discovered by M. Francisco de Aquino, of Porto Alegre, who has cultivated it for eight years, during which it has proved quite constant. It appears to me to be somewhat analogous to Cattleya intermedia var. prolifera (*Gard. Chron.*, 1887, ii., pp. 12, 13, fig. 3), a curious proliferous form, which also shows indications of becoming permanent. It has the colour of C. intermedia, but the petals are somewhat lip-like in character, both in form and colour. I should consider it neither more nor less than an abnormal state of the species just named, which has become fixed or permanent, like Uropedium, or Epidendrum vitellinum flore pleno.

Cattleya Aquinii, Rodr. in *Journ. des Orch.* iv., p. 144.

CALENDAR OF OPERATIONS FOR OCTOBER.

By W. H. White, Burford, Dorking.

One very important matter with regard to the management of Orchids during October is the regulation of the atmosphere in the houses, especially at night, as sudden sharp frosts frequently make their appearance at this season. The grower should always be on the alert to prevent, as far as possible, any great fluctuations in the temperatures, so that all evil effects on the plants through this cause may be avoided. Generally, October frosts come upon us during the early hours of the morning, and the temperatures of the various departments are sure to fall a few degrees lower than they should be, when on no account must any watering or damping down be proceeded with, until the proper temperature has been obtained, as no doubt the drier the houses are, under the circumstances, the better, as there is less likelihood of the plants getting chilled. Considering the exceptionally hot season we have passed through, it is the safest plan to keep a little extra heat in the pipes at night, which will not only prevent the temperatures from falling too low by the morning, but will also be beneficial to the young growths of many autumn-growing Orchids. Another advantage is, that by having a little more heat in the pipes, more pure air can be safely admitted than when less artificial heat is used. Of course there

are times when it is difficult to forecast fluctuations of temperature, but many difficulties may be overcome by careful observation of the outside elements.

We cannot expect the fine weather to last much longer. At the time of writing there is little difficulty in regulating the day temperatures, but in order that sufficient air may be given the hot-water pipes are kept a trifle warmer than was necessary a month ago. This only applies to the hottest divisions. As regards the cool houses, owing to the majority of the inmates having been recently potted, a little closer atmosphere will be maintained until the plants have re-established themselves. And unless the weather becomes cold no artificial heat will be necessary.

The sun may yet prove too strong for such plants as those mentioned in the last calendar, but the shadings used during the summer for the protection of Aërides, Vandas, Epidendrums, Dendrobiums, Cattleyas, and Mexican Orchids may now be entirely dispensed with.

Two warm-growing Oncidiums, Krameri and papilio, are highly appreciated when in bloom, their butterfly-like flowers being very attractive and interesting. These are now opening their buds, and will continue to produce fresh flowers from each stem for some considerable period; but it is not advisable to prolong their flowering season unnecessarily, or the plants will become so weak that they will soon commence to gradually dwindle away. Therefore, when each spike has given out three or four flowers, they should be cut off, which will prove beneficial to the plants next season. These beautiful Oncidiums prefer a light position, hanging up close to the roof glass, in either pan or basket, with but a very small quantity of material to root into.

Amongst the most easily grown of Orchids are the Sobralias, though as a rule they do not find as much favour with cultivators as they deserve, the objection being that the individual blooms last so short a period. Nevertheless, no collection of Orchids can be said to be complete without them, and I think them worthy of more attention than they receive at the present time. Here we have a large specimen of the gorgeous S. macrantha, which has produced three and four flowers in succession from every fully developed stem, and has been a grand object for several weeks past. The pure white variety of the above species, called S. macrantha Kienastiana, is the rarest and most valuable of all the Sobralias, and is represented in only very few collections. A splendid specimen of this lovely Orchid was exhibited by Baron Schröder at the Drill Hall in 1891, when it was unanimously awarded a First-class Certificate by the Orchid Committee, and greatly admired by all present. Equal as regards size to either of the preceding is the beautiful rich yellow S. xantholeuca. Other desirable kinds are S. virginalis, S. liliastrum, S. albo-violacea, and S. Warscewiczii.

All of the above species, being very strong-rooting plants, require a good deal of pot-room, and those that have become pot-bound should at once

have a liberal shift. Give good drainage, and pot firmly with lumps of fibrous peat and sandy loam, combined with a small quantity of sphagnum moss. When in full growth these plants must be plentifully supplied with water at the root, and at other times kept always moist. By syringing well up under the foliage two or three times a day in warm weather they may easily be kept free from insects, which, if left undisturbed, quickly disfigure the leaves. As the plants become re-established, cut this year's flowering shoots down to the roots, and tie out the new growths, so that light and air may pass freely between them. The lightest part of the intermediate house will suit all Sobralias admirably.

Another genus of Orchids that does not find favour with amateurs generally is Schomburgkia, owing, no doubt, to the difficulty of getting the plants to bloom freely. But I consider it possible, with careful attention, by placing the plants in various positions and carefully noting where they do best, that the successful blooming of these distinct plants may be accomplished. Schomburgkia crispa is the only species that flowers here with anything like regularity. It is grown in the Cattleya house standing down amongst the Cattleyas and receiving exactly the same treatment. Other species, as S. undulata and S. Lyonsii (which latter bloomed here for the first time last month, and another plant will soon be opening its pretty flowers), both do well treated exactly the same as the Mexican Lælias. S. tibicinis and S. Sanderiana, which have hollow or cow's-horn-like pseudobulbs, grow well hanging close to the roof glass in the same house. All of them, when growing freely, will take any quantity of water at the root, but when growth is completed they should receive less moisture, and be placed where they will get the least amount of shade and plenty of fresh air, which will harden and mature their growths, and induce them to flower regularly.

By this time some of the spring-flowering Cattleyas, as C. Trianæ and C. Mendelii, will have completed their growths, and consequently they will require less moisture at the root and all the sunlight possible, so that the newly-formed bulbs may be properly hardened and matured, and thus be prepared to withstand the drain upon their resources when the flowering season arrives. When the growths of the above-mentioned species are mature, the plants should be watered only at long intervals, receiving just sufficient to keep the bulbs and leaves from more than slightly shrivelling. But sufficient must be given to induce the plants to make plenty of roots, which, if properly watered, they will continue to do throughout the winter. On the other hand, it should be remembered that too much water at the root or in the atmosphere is one of the principal causes of the black rot, so often observable amongst this beautiful class of Orchids, and it is therefore the safest and best plan to err rather on the dry side than on the wet. It is exceedingly difficult to advise inexperienced cultivators as to

the exact amount of water these Cattleyas require during their so-called period of rest, as it is only by long practical experience and sound judgment that thorough success is attained.

The dwarf-growing Lælia pumila and its varieties, Dayana and præstans, are very charming little plants when in flower. All of them should be grown in small shallow pans, and during the summer months should be suspended close to the glass in the cool house; but now they are flowering, and finishing their growth, the intermediate house will be the best place for them. A small quantity only of peat and sphagnum is requisite for the plants to root in, and this should always be kept fairly moist, while from the commencement of growth, and until it is completed, liberal supplies of water are necessary.

Such stately and strong-growing plants as Vanda tricolor and V. suavis, that have lost their bottom leaves, or that require more root-room, should be taken in hand at the end of the present month or the beginning of next. I have always found when any disturbance at the roots of these plants is necessary that this is the best time of the year to set about it, as far less loss of foliage is likely to accrue than when the operation is performed in the spring. Full directions as to the best method of re-potting the above-mentioned Vandas, and their cultural requirements generally, will be found in the Calendar of Operations for January.

The following Orchids that have been growing in the cool house during the past summer should now be placed in the coolest part of the intermediate or Cattleya house, where they will get abundance of light and air:—Masdevallia tovarensis and all Masdevallias of the Chimæra section, Odontoglossum Krameri, O. nævium, O. cirrhosum, and Miltonia vexillaria.

The East Indian and Cattleya houses must still be well ventilated on all warm days, and abundance of air must also be given to the cool houses whenever the external air is above 50°.

The night temperatures for the month should be as follows:—East Indian, 65° to 70°; Cattleya, 60° to 65°; cool houses, 50° to 55°.

ODONTOGLOSSUM LONDESBOROUGHIANUM.

In reference to the culture of this plant, as given at p. 282 of our last issue, Mr. Horner writes that he keeps the plants as cool as possible during the summer, from 50° to 60° when the weather permits, though the temperature rises considerably with sun-heat. Abundance of air is always given, and shading is avoided as much as possible, though the blinds are let down from about eleven o'clock till four whenever necessary. Good drainage is considered very essential, and careful watering, or the foliage is liable to spot. It is grown with a mixed collection of cool Orchids, and

most of the plants from the other houses are brought into this cool house as they come into flower. Mr. Horner concludes by saying he is sure that this fine Orchid, like others of the cool class, can be grown without heat except in severe weather. Those who have not succeeded under other methods should take the hint, as it seems probable that too much heat has been one of the chief causes of failure. It probably grows at a considerable elevation on the mountains.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

MEGACLINIUM MINUTUM, Rolfe. A singular and floriferous little species, the smallest in the genus, with reddish brown and yellow flowers, arranged on a flattened purple rachis. It was discovered on Sugarloaf Mountain, Sierra Leone, by Mr. G. F. Scott Elliott, naturalist to the recent Anglo-French Delimitation Commission, and flowered at Kew.—t. 7314.

GARDENERS' CHRONICLE.

CYPRIPEDIUM × MASSAIANUM. A handsome hybrid derived from C. superciliare ♀ and Rothschildianum ♂, described in our August issue, p. 245. —Sept. 2nd, p. 267, fig. 48.

GARDEN.

CALANTHE × GIGAS. One of the finest hybrids of the C. vestita group, obtained from C. vestita grandiflora ♀ and C. Regnieri Sanderiana ♂. It was described in our March issue, p. 86.—Sept. 9th, p. 236, t. 926.

GARDENERS' MAGAZINE.

LÆLIA × NOVELTY. A pretty little hybrid derived from Lælia pumila and Lælio-cattleya × elegans ♂, by Dr. Harris, of Lamberhurst, and afterwards in the establishment of Messrs. James Veitch and Sons, of Chelsea.—Aug. 26th, pp. 530, 531, with figure.

EPIDENDRUM ATROPURPUREUM VAR. RANDII.—Sept. 16th, p. 546, with figure.

ILLUSTRATION HORTICOLE.

CYPRIPEDIUM × SIBYROLENSE. A hybrid derived from C. Boxallii and C. insigne, which flowered last February in the collection of M. Martin-Cahuzac, Chateau de Sibyrol, near Bordeaux. It is near C. × nitens, but has a more spotted dorsal sepal.—July 20th, p. 69, t. 179.

EULOPHIA PULCHRA, Lindl. A pretty species, widely diffused in the Mascarene Islands.—Aug. 15th, p. 79, t. 181.

JOURNAL DES ORCHIDÉES.

MAXILLARIA STRIATA, Rolfe. (Described in our last issue, p. 265.)—Sept. 15th, pp. 200, 201, fig. 64.

JOURNAL OF HORTICULTURE.

STANHOPEA AMESIANA, Hort. A white variety of S. Lowii.—Aug. 24th, p. 175, fig. 26.

CYPRIPEDIUM × SANDER-SUPERBIENS. (See p. 307 of our present issue.) —Sept. 7th, p. 215, fig. 31.

LINDENIA.

LÆLIA PURPURATA VAR. FASTUOSA. A handsome variety, with light rose sepals and petals, the latter irregularly variegated with a darker tint along the centre and towards the apex.—t. 385.

LÆLIO-CATTLEYA × EXIMIA. A handsome hybrid raised by Mr. Seden from Cattleya Warneri ♀ and Lælia purpurata ♂, now in the collection of Baron Sir Henry Schröder, The Dell, Egham.—t. 386.

MASDEVALLIA × POURBAIXII. A handsome hybrid raised by M. Eugene Pourbaix, of Mons, Belgium, from M. Veitchiana ♀ and M. Shuttleworthii ♂. It flowered for the first time during the past summer, when it produced a single bloom.—t. 387.

ODONTOGLOSSUM THOMPSONIANUM, Garnier. A handsome form, with short broad sepals and petals, the former very dark, and a broad lip with orange-brown crest and a similar blotch on the disc. It is compared with O. hystrix, but is evidently a variety of O. sceptrum, which is similar in shape. It was imported by Messrs. Linden, L'Horticulture Internationale, Brussels, but has since passed into the collection of W. Thompson, Esq., Walton, Stone, Staffordshire.—t. 388.

REVUE HORTICOLE.

CATTLEYA × BLESENSIS. A very pretty hybrid derived from Lælia pumila ♀ and Cattleya Loddigesii ♂, by M. Ch. Maron. The cross was effected in November, 1885, the seeds matured and were sown in February, 1887, and the first flower was produced in November, 1890. It can only be considered a variety of Lælio-cattleya × Aurora, which flowered with Messrs. Veitch in September, 1889, and had Lælia pumila Dayana as the seed parent.

REVUE DE L'HORTICULTURE BELGE ET ÉTRANGÈRE.

CATTLEYA MOSSIÆ.—Sept., p. 201, with plate.

WIENER ILLUSTRIRTE GARTEN-ZEITUNG.

LYCASTE × SCHOENBRUNNENSIS. A handsome hybrid raised in the collection of the Emperor of Austria, at Schönbrunn, near Vienna, it is said from L. gigantea and L. Skinneri, though its characters resemble L. Schilleriana rather than L. gigantea. It was described in our February number, p. 51.—Sept., p. 288, t. 3.

CONTINENTAL NOTES.

By Ch. de Bosschere.

At the September Horticultural Meeting at Ghent M. Jules Hye exhibited two of his achievements in the genus Cypripedium, namely, C. × triumphans, derived from C. × Sallieri superbum ♀ and C. × œnanthum superbum ♂; and C. × giganteum, derived from C. × Sallieri Hyeanum ♀ and C. × Harrisianum ♂; the latter remarkable for the exceptional developments of all the floral segments. C. × triumphans is one of the most beautiful hybrids yet raised; the lower two-thirds of the upper sepal are yellow, covered with jet-black dotting, and relieved with a brilliant polish; the central band is quite black, which shades off through violet-rose into the white ground colour, the broad margin being pure white. The petals are broad, somewhat drooping, curved, dark crimson, varnished and bordered with golden-yellow; their lower part is paler, lightly dotted with black at the extreme base. The lip is brilliant crimson in front, nankeen-yellow behind, bordered with chrome-yellow round the orifice. Staminode honey-yellow, very concave at the base, surmounted by a small bronze-coloured tubercle in the centre. It is a robust hybrid, with beautiful dark green glaucous leaves. A plant of Miltonia Moreliana superba, exhibited by M. Jules Hye, was distinguished by its very dark tint and the exceptional length of the sepals and petals.

At the meeting of the Orchidéene, of Brussels, many handsome Orchids were shown. Messrs. Linden exhibited Anguloa eburnea Lindeni, with large snow-white flowers; Galeandra Claesii; Maxillaria callichroma; Miltonia spectabilis radians, whose lip is nearly entirely snow-white; the rare Odontoglossum præstans; and Paphinia grandis, with a very large and fragrant flower. Madame Block exhibited with great success a very beautiful Cypripedium Elliottianum, and a superb C. × Morganiæ, somewhat resembling C. × Morganiæ burfordiense, as figured in the *Reichenbachia*, in colour.

In the houses of L'Horticulture Internationale are flowering some fine varieties of Cattleya, many beautiful plants of Stauropsis lissochiloides (Vanda Batemanii), and various Vandas, which are much admired by visitors.

In the establishment of M. A. A. Peeters is flowering a brilliant variety of Cattleya Warscewiczii, whose very large lip has two handsome yellow eyes in the throat; Cattleya × Patrocinii, a natural hybrid between C. Leopoldii and C. guttata, with violet-rose, lightly spotted segments; and Lælio-cattleya × Schilleriana, with seven beautiful flowers.

In the houses of M. Alfred Van Imschoot, of Mont-St.-Amand, Ghent, are many beautiful things. Specially noteworthy are Cattleya Sanderiana, a remarkable variety, and C. velutina, distinguished by the breadth of the

segments and the beauty of its lip, rayed with purple lines and bordered with yellow. A magnificent form of Lælio-cattleya × elegans Turneri, well-flowered examples of Cypripedium Rothschildianum and C. Elliottianum, and a fine Cattleya Loddigesii with long petals and a white lip, are also noteworthy. Here also may be seen the rare Cœlogyne Thuniana, Epidendrum prismatocarpum, with twelve racemes, Vanda tricolor Imschootiana, the rare Brownleea cœrulea, and Epidendrum vitellinum, with seventeen of its brilliant flowers.

Mm. Edm. Vervaet et Cie have two beautiful forms of Lælio-cattleya × elegans Turneri, one with salmon-coloured segments, the other of a brighter tint, with nine flowers borne on an enormous pseudobulb of over a yard high, with equally well-developed leaves. A Cypripedium Stonei is also remarkable for the length of the tube of the lip and the small dimensions of the slipper-shaped front lobe.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

A WAVE of modesty must have passed over a great many Orchid growers on the occasion of the large Fruit and Flower Show, held in the Agricultural Hall, Islington, from August 29th to September 1st, as there were comparatively few who put in an appearance.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), received an Award of Merit for Cypripedium Sandero-superbiens, a fine large hybrid, somewhat resembling C. × Morganiæ, which had been raised from seed presented by Capt. Vipan. C. Sanderianum was the seed parent.

The Hon. Mrs. Foley, F.R.H.S., Packham, Fordingbridge (gr. Mr. Moxham), sent a deeply coloured Cattleya Leopoldi, Pernambuco variety.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), exhibited a Cypripedium seedling, raised from C. barbatum ♀ and C. × selligerum ♂, a bold dark hybrid with large lip and heavily blotched petals; also a good form of Cattleya Alexandræ.

An Award of Merit was again given to Cypripedium × Edwardii (C. superbiens ♀ × C. Fairieanum ♂), which was this time shown by Thos. Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson). The same hybrid was shown on July 25th by Messrs. Pitcher and Manda, and received a similar award.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, N., exhibited a pretty group, and obtained a Silver Banksian Medal. Chiefly noteworthy

were the orange Dendrobium densiflorum, Oncidium Jonesianum, O. incurvum, O. tigrinum, and Cypripedium × Bradshawianum.

Mr. P. McArthur, Maida Vale, W., exhibited a form of Cypripedium niveum, called radians, the chief peculiarity of which was the radiating dotted purple lines on a white ground.

A Silver Banksian Medal was awarded to Messrs. F. Sander and Co., St. Albans, for a group containing many rare and interesting plants. Perhaps the most noticeable was a fine strong specimen of Habenaria carnea, which received a First-class Certificate. The flowers were of a beautiful soft tinge of salmon-pink, furnished with long spurs, and the bronzy-green leaves were decorated with silvery spots, after the fashion of a Bertolonia. Aërides Ballantineanum aureum—shown also on August 8th—received an Award of Merit. Mention must also be made of a Peristeria aspersa, a species with buff-yellow flowers densely speckled all over with purple-red. It is of seedling origin, and may possibly be a hybrid. Calanthe Sanderiana, a handsome East African species, Acineta Barkeri, Pescatorea Klabochorum, and Vanda Sanderiana were also included in this group.

The meeting at the Drill Hall, James Street, Victoria Street, Westminster, was more productive of good things. The President of the Society, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), exhibited some Cypripediums, the most remarkable being the beautiful, but slightly known, C. præstans, and C × œno-superbiens, a fine beautifully-coloured hybrid with bold erect flowers, the upper sepal of which is densely covered with large blackish purple blotches on a clear purple ground. The latter received an Award of Merit. C. × conco-Lawre and C. × Morganiæ burfordiense were also shown.

Norman C. Cookson, Esq., F.R.H.S., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), exhibited Lælio-cattleya Clive (C. Dowiana ♀ × L. præstans ♂), a hybrid with rosy sepals and petals and a deep velvety purple lip with orange veins in the throat, resembling on the whole L.-C. × Ingrami (L. pumila Dayana ♀ × C. Dowiana aurea), and almost the reversed cross.

The Hon. Mrs. Foley, F.R.H.S., Fordingbridge, Hants (gr. Mr. Moxham), exhibited two plants of Cattleya Alexandræ, chiefly remarkable for their very long flower spikes, and a pale mauve C. Gaskelliana.

C. J. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited Cypripedium × L'Unique (C. Lindleyanum ♀ × C. Schlimii album ♂), a distinct hybrid, and C. × Adonis (C. hirsutissimum ♀ and C. Curtisii ♂), in which the blood of the seed-parent chiefly predominates.

H. S. Leon, Esq., M.P., F.R.H.S., Bletchley Park, Bucks (gr. Mr. A. Hislop), obtained an Award of Merit for Cypripedium × Leonæ (C. insigne Chantini ♀ × C. callosum ♂), which bore two large fine flowers on the scape. The upper sepal is mostly pure white with a green basal area

covered with rows of black-purple blotches. The petals are purple-brown, the lip being much deeper in tone.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. May), exhibited a strong specimen of Lycaste Skinneri, on which there were two large flowers issuing from the same bract.

A Bronze Banksian Medal was awarded to R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), for a group of Cypripediums, which, with the single exception of C. Schomburgkianum (or, more correctly, Selenipedium Klotzschianum), a rare species allied to C. caricinum, were all hybrids, the names and parents of which can only be mentioned at present:—C. × Madame Cappe (C. Spicerianum ♀ × C. × Dauthieri ♂); C. × Hebe (C. Hookeræ Measuresianum ♀ × C. Lawrenceanum ♂); C. × Diana (C. barbatum superbum ♀ × C. Spicerianum ♂)—somewhat like C. × Eyermanianum; C. × picturatum (C. superbiens ♀ × C. Spicerianum ♂); C. × Ganesa (C. × Sallieri ♀ × C. Lawrenceanum Hyeanum ♂); and a seedling Selenipedium, from S. × cardinale ♀ and S. longifolium ♂.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent a collection of beautiful cut flowers, representing the pure and charming Cattleya Statteriana, C. × Minucia, C. × Parthenia, C. guttata Leopoldi, Stand Hall variety, C. Victoria-regina, and Lælia × elegans blenheimensis.

Mr. H. Elliott, F.R.H.S., Stourvale Nurseries, Christchurch, Hants, exhibited a spike of a good variety of Cattleya Gaskelliana.

Messrs. Linden, of Parc Leopold, Brussels, received an Award of Merit for Cypripedium × Clotilde Moens (C. × Leeanum ♀ × C. Haynaldianum ♂), a strong plant with three large flowers on the scape, and resembling C. × Carnusianum (C. Haynaldianum ♀ × C. Spicerianum ♂), but being larger and more purely coloured. It was described at p. 284 of our last issue.

A Silver Banksian Medal was granted to Messrs. Hugh Low and Co., Clapton, for a group in which were several fine specimens of the ivory-white Stanhopea Amesiana, Cypripedium Victoriæ-Mariæ, Miltonia Roezlii, Trichopilia Wageneri, &c.

The Secretary to the Committee, Mr. James O'Brien, Harrow-on-the-Hill, exhibited flowering plants of Satyrium membranaceum, with white and pink flowers, and roundish ovate leaves with a glassy-looking pellucid upper surface.

A Silver Flora Medal went to Messrs. F. Sander and Co., St. Albans, for a group, including Angræcum articulatum, Aërides Lawrenceæ, Warscewiczella Wailesiana, Habenaria carnea and H. militaris, seven plants of Miltonia spectabilis Moreliana, several Cypripediums, Oncidiums, &c.

Messrs. J. Veitch and Sons, King's Road, Chelsea, S.W., received a First-class Certificate for Cypripedium × Aphrodite (C. niveum ♀ × C.

Lawrenceanum ♂), a fine white hybrid with rosy veins and dots, and the reverse cross of C. × Antigone. An Award of Merit was given to the lilac-purple Lælio-Cattleya × Epicasta (L. pumila ♀ × C. Warscewiczii ♂), and also to L.-C. × Nysa (L. crispa ♀ × C. Warscewiczii ♂), which was exhibited for the first time in August, 1891, and has pale rose sepals and petals and a deep purple lip. Dendrobium neo-guineense, which is like an albino of the green-flowered D. Veitchianum, was also shown.

CORRESPONDENCE, &c.

CATTLEYA × HARDYANA.—A superb form of this handsome Cattleya, in the shape of a four-flowered raceme, has been sent by Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. T. Poyntz). The plant has twenty-eight bulbs, and this year has produced thirteen flowers on four spikes. The sepals are slightly mottled and the petals slightly veined, while the lip is deep purple-crimson in front, the disc beautifully pencilled with golden lines, with a large deep yellow blotch on either side. A rather smaller form comes from R. Brooman White, Esq., of Arddarroch, which flowered out of a batch of C. Dowiana aurea from Messrs. Charlesworth, Shuttleworth and Co.

Cattleya Alexandræ.—Mr. Young also sends four flowers of this new Cattleya, with soft rose lip, and slightly darker, though scarcely bronzy, undulated sepals and petals. We have also seen it in the establishment of Messrs. Hugh Low and Co., of Clapton, though not so well developed. Several other people have also flowered it, and though not yet fully established, it is certainly a very beautiful Cattleya, though a year ago it was precipitately declared to be the worst of the guttata group.

H. J. Ross, Esq., Florence, Italy, sends a flower of a Cypripedium purchased as C. neo-guineense, which is certainly C. præstans, Rchb. f. The former name has been cited as a synonym of C. Rothschildianum, Rchb. f., but we do not know on what evidence, and should like to see the matter cleared up. At present it would appear to be a synonym of C. præstans. And is it certain that the other species came from New Guinea? The other plants are Stanhopea Wardii and a variety of Vanda suavis.

R. I. Measures, Esq., Cambridge Lodge, Camberwell, sends a seedling Selenipedium, very near S. × Sedeni, which was derived from S. × cardinale crossed with the pollen of S. longifolium, and thus a hybrid in the third degree :—S. longifolium × Schlimii = S. × Sedeni —S. × Sedeni × Schlimii albiflorum = S. × cardinale.—S. × cardinale × S. longifolium = S. × seedling.—Parentage, S. longifolium $\frac{5}{8}$, S. Schlimii $\frac{3}{8}$. It would almost pass as a light form of S. × Sedeni. Had S. × Ainsworthii been used instead of S. longifolium the parentage would have been S. longifolium $\frac{1}{2}$, S. Schlimii $\frac{1}{2}$, or precisely the same as S. × Sedeni.

Portraits received with thanks :—Rodriguezia pubescens from R. B. White, Esq., Arddarroch, and C. Winn, Esq., Selly Hill, Birmingham ; which latter also sends Cypripedium × Edith Winn. H. Little, Esq., The Barons, East Twickenham, sends Cypripedium × selligerum and C. × Io grandis. Several interesting Cypripediums and other Orchids have also been received from Mr. G. F'Anson, of Upper Clapton.

ERRATA.

P. 284, line 17 from bottom. for Cattleya "Shepherdiana" read "Schofieldiana."

P. 286, line 16. Cypripedium Fairieanum was the pollen parent of Cypripedium Edwardii, not the seed parent, as inadvertently stated. It is correctly given in the original description at p. 23.

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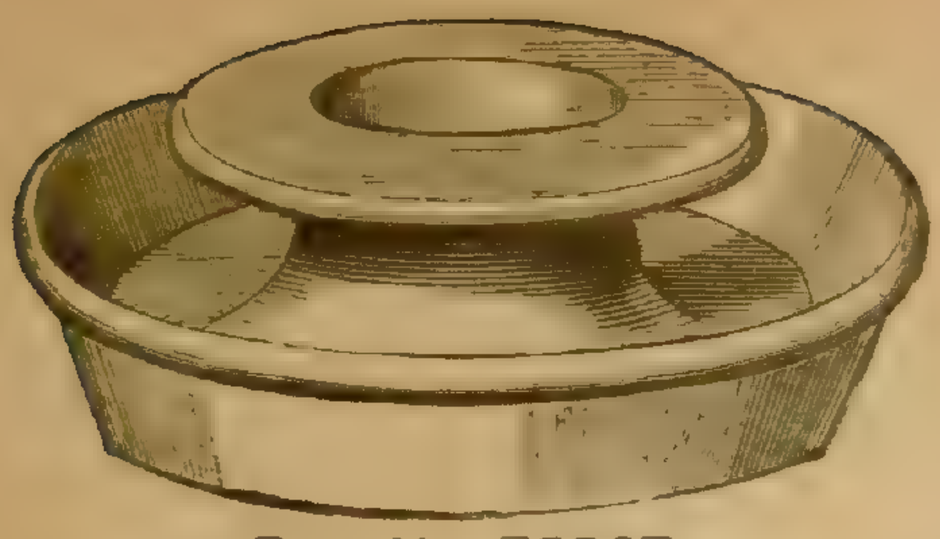

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*** An Illustration is unavoidably postponed until next month.*

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THE ORCHID REVIEW.

VOL. I.] *NOVEMBER*, 1893. [No. 11.

NOTES.

THE meeting of the Royal Horticultural Society, on October 24th last, was remarkable for a fine display of Cattleya labiata from various collections, and among them a plant of the rare and beautiful Cattleya labiata alba. Several interesting hybrids were also exhibited.

Two meetings are announced for November, on the 14th and 28th respectively, when the Orchid Committee will meet at the usual hour.

The remarkable Lissochilus giganteus has not often bloomed in this country. We learn from the *Journal of Horticulture*, that a plant in the collection of Holbrook Gaskell, Esq., Woolton Wood, near Liverpool, is now carrying a spike nine feet three inches long, and bearing thirty-six flowers at the top. It is grown in an eight-inch pot, in a mixture of rough peat, cow manure, crocks, charcoal, and sand, in a stove temperature, with abundance of water when growing, but kept dust dry when at rest.

In its native home on the Congo it must be a remarkable sight, as it grows in marshes by the river banks in masses, flowering in profusion, and the scapes are said to sometimes attain a height of sixteen feet.

Orchid collecting in Sarawak is likely to become a difficult matter. Rajah Brooke is said to have prohibited the collection of natural history objects within his territory, and is taking stringent measures for preserving the fauna and flora, which is said to be in danger of being destroyed, in consequence of the depredations of Orchid hunters and others.

How far the precautions are justified we are not able to judge, though we can easily conceive cases where such measures might be necessary. A

close season in some other localities may be among the possibilities of the future.

America has lost one of her foremost Orchidists, in the person of Mr. F. L. Ames, who died on September 13th last, in his fifty-ninth year. His collection of Orchids at North Easton, Mass., was very fine, and contained many rarities. His name is commemorated in Vanda Amesiana, Luisia Amesiana, Phalænopsis × F. L. Ames, and others.

BOLLEA LALINDEI.

This is one of the few blue Orchids known in gardens, though unfortunately it is seldom seen. Its discovery was due to Mr. Lalinde, "the Orchidophilist architect of Medellin, in New Granada, who for so many years kindly assisted the New Granadan travellers and Orchid destroyers without being the least acknowledged in Europe"—at least so Reichenbach affirms. "Finally, the gentleman appears to have settled his mind by sending himself living Orchids to Europe, and he began to do so assisted by his young Belgian friend, M. Patin." It flowered with Messrs. James Veitch and Sons, in 1874. The flowers were described as beautiful bright violet, the tip of the upper sepal green, and the inferior halves of the lateral ones brownish purple, the lip deep orange, and the column deep purplish. Bollea Patini, described at the same time, from the same source, has rather larger and much paler flowers of a pallid blue, but it is evidently a variety of the same. It flowered in the collection of G. Herriot, Esq., of Cholmeley Park, Highgate. A plant of the latter form has recently flowered in the collection of Welbore S. Ellis, Esq., Hazelbourne, Dorking, which was imported in 1892 with Cattleya Warscewiczii, from a district well up the Magdalena River in New Granada. The flower is pale whitish lilac, suffused with mauve near the tips, the crest of the lip deep yellow and column mauve-purple. This organ is very remarkable, being eleven lines broad, and very concave, giving the flower a very grotesque appearance. It should be cultivated in the warm house, in a mixture of peat and moss, in well-drained pots or on pieces of fern stem. It requires an abundance of water when growing, and should never be allowed to become dry at any time.

Bollea Lalindei, Rchb. f. in *Gard. Chron.*, 1874, ii. p. 33; *Bot. Mag.*, t. 6331. *Zygopetalum* Lalindei, Rchb. f. in *Gard. Chron.*, 1874, ii. p. 33, in note; *Veitch Man. Orch.*, p. 54.

Bollea Patini, Rchb. f. in *Gard. Chron.*, 1874, ii. p. 34; 1875, i. pp. 8, 9, fig. 1; *Fl. Mag.* n. s., 1875, t. 147.

HISTORY OF ORCHID HYBRIDISATION.

PART X.

(*Continued from page* 295.)

THE first hybrid Stanhopea was raised in Germany, in the collection of Herr Spindler, of Spindlersfeld, from S. oculata crossed with the pollen of S. tigrina. It was described and figured in the *Gartenflora* as S. × Spindleriana. It is fairly intermediate, both in shape and colour, the flowers being larger and fewer in number than those of S. oculata, with the addition of some of the dark-coloured blotches of S. tigrina. It flowered in the summer of 1890.

A very pretty little hybrid was figured in the *Orchidophile* for 1890 under the name of Cattleya Vedasti, which had been raised in the collection of M. Perrenoud, between Cattleya Loddigesii ♀ and "C. Pinellii marginata," *i.e.*, Lælia pumila, ♂. It is therefore the reverse cross of C. × blesensis (p. 315), and may be considered as a variety of Lælio-cattleya × Aurora (p. 261).

Another handsome form was figured in the same work under the name of Cattleya × amœna. It was raised by M. Alfred Bleu, of Paris, from Cattleya Loddigesii ♀ and Lælia Perrinii ♂, and has since received its correct name of **Lælio-cattleya × amœna.**

Cypripedium × javanico-Spicerianum was raised in the collection of M. Page, of Bougival, France, between C. javanicum and C. Spicerianum. **It is not recorded which was the seed parent.**

Cypripedium × barbato-Veitchianum was raised by M. Alfred Bleu, of Paris, between C. barbatum ♀ and C. superbiens (Veitchianum) ♂, and must be considered as a variety of C. × superciliare (p. 39).

A considerable number of hybrids were recorded during 1891, though the great majority were Cypripediums, which genus soon became especially popular with hybridists, owing to the facility with which seedlings can be raised and the comparatively early stage at which they flower. During 1891 **the genus Disa was added to the list.**

Disa × Veitchii, the first hybrid in the genus, **is an interesting and very** beautiful plant. It was raised by Mr. Seden, in the collection of Messrs. James Veitch and Sons, of Chelsea, from D. racemosa crossed with the pollen of D. grandiflora, and flowered for the first time when only a year and nine months old, thus beating the record for quickness of flowering from the time of sowing the seed. It was exhibited at a meeting of the Royal Horticultural Society on June 9th, and received the double award of a First-class Certificate and a Silver-gilt Flora Medal.

Another plant which received the same double award on this date was the beautiful Lælio-cattleya × Arnoldiana, raised in the establishment of Messrs. F. Sander and Co., of St. Albans, by Mr. Maynard. It was

obtained by crossing Lælia purpurata with the pollen of a Cattleya of the labiata group—possibly C. Warscewiczii. It is allied to L. × callistoglossa.

A particularly interesting hybrid exhibited on the same date was Odontoglossum × excellens, Rchb. f., raised by artificial crossing. This Odontoglossum was originally described in 1881 from a wild plant, and its author suggested that it was probably a natural hybrid between O. Pescatorei and O. tripudians. It was afterwards pointed out that O. triumphans instead of O. tripudians must have been the second parent. In order to test this, Mr. Seden crossed O. Pescatorei with the pollen of O. triumphans, and the resulting hybrid proved absolutely identical with the wild one. It was the second hybrid in the genus whose parentage had been proved by direct experiment, and the first which reached the flowering stage in England.

Epidendrum × dellense is a very pretty hybrid, with orange-coloured flowers, which was raised in the collection of Baron Schröder, The Dell, Egham, from E. xanthinum ♀ and E. radicans ♂. It most resembles the former, but has larger flowers of deeper colour. It received a First-class Certificate from the Royal Horticultural Society on April 14th.

Phaius × maculato-grandifolius was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Phaius grandifolius and P. maculatus, the former being the seed parent. The leaves have a few yellowish spots, derived from P. maculatus, and the flowers are about as large as those of P. grandifolius, the sepals and petals yellow with a slight coppery tinge, and the lip yellow at the base and chestnut-red in front, with some lines of the latter colour in the throat. It is a handsome hybrid of novel colour, and received a First-class Certificate from the Royal Horticultural Society on November 10th.

Two hybrid Masdevallias which made their appearance in 1891 may now be considered.

Masdevallia × falcata was raised in the collection of D. O. Drewett, Esq., of Riding Mill-on-Tyne, from M. Lindeni ♀ and M. Veitchiana ♂, and most resembles the latter, especially in colour. The sepals are closely studded with minute purplish crimson papillæ on a yellow ground, which becomes deep red towards the tails. It is very pretty, and may be compared with the best form of M. × Chelsoni.

Masdevallia × Mundyana is a handsome hybrid with large orange-coloured flowers, raised in the establishment of Messrs. F. Sander and Co., of St. Albans, between M. ignea aurantiaca and M. Veitchiana. It is not stated which was the seed parent. It received a First-class Certificate at the Temple Show of the Royal Horticultural Society in May, 1891.

Several hybrid Cattleyas were also recorded during this year, as follows :—

Cattleya × Parthenia is a secondary hybrid raised by M. Alfred Bleu, of Paris, from C. × fimbriata crossed with the pollen of C. Mossiæ. It is

a handsome form, with blush-white flowers, the disc of the lip light yellow, and the anterior portion beautifully veined and suffused with light rosy purple.

Cattleya × fimbriata, mentioned in the preceding paragraph, flowered for the first time in 1878, though the fact does not appear to have been recorded at the time. It is said to have been raised from C. amethystina (*i.e.*, C. intermedia) ♀ and C. Aclandiæ ♂, the cross being effected in 1870. M. Bleu states that three seedlings "were successfully reared; the one acquired in all its parts the characters of the mother, while the two others borrowed those of the father; and the difference between them is so great that it is indispensable to have the key of the enigma in order to recognise their consanguinity." The two plants said to resemble C. Aclandiæ were called C. × calummata (see p. 99), and the other one C. × fimbriata. Unfortunately there seems to have been some confusion in the record, for the plant of C. × fimbriata in Sir Trevor Lawrence's collection, received from M. Bleu, is like C. × Krameri, Rchb. f., a natural hybrid between C. intermedia and C. Forbesii, as has been experimentally proved by Messrs. F. Sander and Co., of St. Albans (see p. 2). No one can compare the wild hybrid with those raised by M. Bleu and Messrs. Sander without seeing that all are derived from the same parentage.

Cattleya × Lowryana was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, it is said from C. intermedia and C. Forbesii, and thus must also be a variety of C. × Krameri. It received a First-class Certificate at the Royal Horticultural Society's Temple Show in May, 1891.

Cattleya × Prince of Wales, raised by Messrs. Sander, also received a First-class Certificate at the same time as the preceding. It is said to have been obtained from a cross between C. × calummata and C. Mossiæ Wageneri. It is very handsome; the flowers pure white, with the lip tinged with rose.

The following Lælio-cattleyas were recorded during 1891:—

Lælio-cattleya × Nysa was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Lælia crispa ♀ and Cattleya Warscewiczii ♂. It was exhibited at a meeting of the Royal Horticultural Society on August 25th, on the occasion of its first flowering.

Lælio-cattleya × Behrensiana was raised by Messrs. F. Sander and Co., of St. Albans, from Lælio-cattleya × Schilleriana ♀ and Cattleya Loddigesii ♂. The flowers are light blush, with the front lobe of the lip bright amethyst-purple.

Five Selenipediums appeared during the year, as follows:—

Selenipedium × Coppinianum was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from S. × Sedeni and S. × conchiferum, both parents being themselves of hybrid origin. The flowers are light rose-coloured, with a darker lip.

Selenipedium × hybridum was also raised by Messrs. Sander, from S. caudatum roseum and S. × conchiferum. The sepals are greenish yellow and the petals and lip fawn-coloured.

A third Selenipedium was raised by Messrs. Pitcher and Manda, of Hexstable, Kent, and received the name of Cypripedium × Brownii. It is said to be a very handsome form, and its parentage is recorded as "C. magnificum × C. leucorrhodum."

The next appeared with Messrs. James Veitch and Sons, of Chelsea. It was obtained by crossing Selenipedium longifolium with the pollen of Uropedium Lindeni (an abnormal state of Selenipedium caudatum), and received the name of Cypripedium × macrochilum. The abnormal lip of Uropedium is quite lost in the hybrid, which may practically be considered as a variety of S. × grande (p. 71).

The first hybrid from Selenipedium Boissierianum, which completes the list, was also raised in Messrs. Veitch's establishment, by Mr. Seden. S. Schlimii was the seed parent. The hybrid, which received the name of Cypripedium × Cleola, is a pretty little plant, comparable with a light form of S. × Sedeni.

The remaining hybrids of the year were all Cypripediums, and may now be briefly enumerated.

The following nine were raised in the establishment of Messrs. F. Sander and Co., of St. Albans, by Mr. Maynard:—

C. × Orpheus was derived from C. venustum ♀ and C. callosum ♂, and is recorded as the first hybrid derived from the latter, which it most resembles.

C. × Castleanum was raised from C. hirsutissimum ♀ and C. superbiens ♂. It is a brilliantly coloured and handsome hybrid, bearing some resemblance to C. × porphyrochlamys (p. 105, fig. 7).

C. × Alcides was obtained by crossing C. hirsutissimum with the pollen of C. insigne. It is a large and delicately coloured hybrid, and fairly intermediate in character.

C. × Kramerianum was derived from C. œnanthum ♀ and C. villosum ♂, and most resembles the former.

C. × barbato-superbiens, whose parentage is indicated in its name, is a stately flower, which received an Award of Merit from the Royal Horticultural Society at the Temple Show in May, 1891. It must be considered as a variety of C. × superciliare (p. 39).

C. × Macfarlanei was derived from C. × calophyllum ♀ and C. Spicerianum ♂, and most resembles the former.

C. × Maynardii is a beautiful hybrid derived from C. purpuratum ♀ and C. Spicerianum ♂, and combines the characters of the two species. It is dedicated to Mr. Maynard, Messrs. Sander's clever hybridist.

C. × Pollettianum is a very handsome hybrid derived from C. × calo-

phyllum and C. œnanthum superbum, both parents being themselves of hybrid origin. The dorsal sepal is very richly coloured.

C. × Malyanum was derived from C. Spicerianum ♀ and C. × Crossianum ♂, and bears some resemblance to C. × Leeanum, but without any purple spotting on the dorsal sepal.

From the establishment of Messrs. James Veitch and Sons, of Chelsea, appeared the three following :—

C. × Calypso was derived from C. Spicerianum ♀ and C. Boxallii ♂, and is nearly allied to C. × Lathamianum (p. 227).

C. × Creon is a dark and richly-coloured hybrid derived from C. × œnanthum superbum ♀ and C. × Harrisianum superbum ♂, to which a First-class Certificate was awarded by the Royal Horticultural Society on February 10th.

C. × Corningianum was derived from C. superbiens ♀ and C. philippinense ♂, and thus must be considered as a variety of C. × Youngianum (p. 295).

Three others appeared with D. O. Drewett, Esq., of Riding Mill-on-Tyne :—

C. × Ceres was raised from C. Spicerianum fertilised with the pollen of C. hirsutissimum, and most resembles the latter, on which it is said to be an improvement.

C. × Juno is a very beautiful hybrid obtained from C. callosum ♀ and C. Fairieanum ♂, and bears some resemblance to C. × vexillarium (p. 297, fig. 15). It flowered in two years and eight months from the time the seed was sown.

C. × Pallas was derived from C. × calophyllum ♀ and C. callosum ♂, and is fairly intermediate in character.

Two others were raised in the collection of A. J. Hollington, Esq., Forty Hill, Enfield :—

C. × Muriel Hollington was raised from C. niveum crossed with the pollen probably of C. insigne, though some doubt has been expressed on this point. It is a very charming little hybrid most resembling the former.

C. × enfieldense was derived from C. Lawrenceanum ♀ and C. Hookeræ ♂, and may be compared to an improved C. × marmorophyllum (p. 40).

Two others were raised by Messrs. Linden, L'Horticulture Internationale, Brussels :—

C. × Engelhardtæ was derived from C. insigne Maulei ♀ and C. Spicerianum ♂, and must be considered as a variety of C. × Leeanum (p. 101) with more yellow petals.

C. × Bragaianum was raised from C. hirsutissimum cœrulescens ♀ and C. Boxallii ♂, and is thus the reversed cross of C. × Godseffianum (p. 259).

C. × Celia was raised in the collection of W. S. Kimball, Esq., of Rochester, New York, it is believed from C. tonsum and C. Spicerianum.

A hybrid from these two species, in which C. tonsum was the seed parent, was also raised by M. Jolibois, at Luxembourg, which was afterwards called C. × Madame Barbey. A third one was raised in the collection of C. Ingram, Esq., of Godalming.

C. × Berenice was raised by Captain Vipan, Stibbington Hall, Wansford, between C. Roebelenii (a variety of C. philippinense) ♀ and C. Lowii ♂, and was the first hybrid both of whose parents belong to the racemose group. It is a handsome hybrid.

C. × Carnusianum is a hybrid from C. Haynaldianum and C. Spicerianum, which is said to have been first raised by Dr. Carnus, of Paris, and afterwards in the collection of J. C. Parr, Esq., of Grappenhall Heyes, Warrington.

C. × Rowallianum was raised by Messrs. Pitcher and Manda, of Hexstable, Kent, between C. villosum ♀ and C. venustum ♂, and this is apparently a variety of C. Williamsianum (p. 100).

C. × Adonis appeared with Messrs. B. S. Williams and Son, of Upper Holloway, and is said to have been raised from C. Spicerianum ♀ and C. × Harrisianum ♂.

C. × amabile is a secondary hybrid, raised by M. Alfred Bleu, of Paris, from C. × javanico-superbiens ♀ and C. Hookeræ ♂, whose characters are well combined in it.

(*To be continued.*)

THE HABITAT OF CATTLEYA WARNERI.

Very little has been recorded respecting the habitat of Cattleya Warneri. Messrs. Veitch indicate it on their map as some distance south-west of Rio de Janeiro, though they remark—"The precise habitat has not been divulged." On the other hand, I have amongst my MS. notes a record that it comes from Bahia. And now we have confirmatory evidence on this point. The appearance of two natural hybrids recorded elsewhere, Lælio-cattleya × Gottoiana and L. × albanense, in which Cattleya Warneri was one parent, is particularly interesting, because the other parents, Lælia tenebrosa and L. grandis, respectively, are known to be from Bahia. And there is a yet older example. In 1882 a natural hybrid was imported by Messrs. Hugh Low and Co., of Clapton, which was said to have been found growing on a tree in company with Cattleya Schilleriana (another Bahia species) and C. labiata. It was described as C. × Whitei. Instead of C. labiata read C. Warneri, and you have the clue to the parentage of the plant. That Cattleya Warneri grows in Bahia is now certain, whatever its exact range may be. The South Brazilian habitat, to say the least, requires confirmation, and until this is forthcoming may be considered as extremely doubtful.

R. A. R.

CATTLEYA LABIATA.

Our collections are now gay with the flowers of this beautiful plant, and it is interesting to observe what a range of variation it presents. The lighter varieties seem to be the most common, but there are also many dark forms which are very richly coloured. Albino forms are apparently very rare. Probably the best yet known is the variety alba, which appeared both in the collection of M. G. Warocque, of Mariemont, and in that of M. Wells, Esq., of Broomfield, Sale, near Manchester. The flowers are pure white, with a lemon-coloured disc. The one called elegans, which appeared in the collection of T. R. Watt, Esq., of The Briars, Chislehurst, is also very handsome. The sepals and petals are white, but the colour of the lip is nearly typical, and the contrast is very effective. A third, called gloriosa, has the flowers of a very light blush, with a purple-crimson blotch in front of the yellow disc. Of the coloured forms quite a series of variations could be picked out. Its re-introduction is the most important event of recent years.

A correspondent raises the question whether this plant ever really grew near Rio, as reported, and whether Swainson's plant did not come from the same region as those recently introduced. This is not a new idea, but the doubts expressed in the matter have no foundation in fact, as there are records which prove that down to the year 1836 it grew near to Rio, and as Swainson's collections were made in the neighbourhood of that city, it is evident that the plants sent home by him some eighteen years before were from this district.

It was originally sent by Swainson to the late Mr. William Cattley, of Barnet, in or before 1818, and flowered for the first time in Europe in November of that year. Mr. Cattley states:—

> The most splendid perhaps of all orchideous plants, which blossomed for the first time in the stove of my garden in Suffolk, during 1818, the plant having been sent to me by Mr. William Swainson during his visit to Brazil (*Hook. Exot. Fl.* ii. t. 157).

As it proved to belong to a new genus, it was dedicated by Lindley to Mr. Cattley, under the name of Cattleya labiata. In 1819 it flowered in the Glasgow Botanic Garden, and subsequently in other collections. Two or three figures were soon published, but no one seems to have stated the exact spot where Swainson got it.

Gardner, however, supplied some very exact information respecting the habitat of the plant. He first set foot in Brazil on July 23, 1836, at Rio de Janeiro, and soon afterwards made a series of excursions in the neighbourhood, in which he met with this handsome plant, and records as follows, in his *Travels in the Interior of Brazil*, ed. 2:—

> Near the sea, and about 15 miles distant from the city, rises the Gavea, or Topsail Mountain, so called from its square shape, and well known to English sailors by the name

of Lord Hood's Nose. It has a flat top, and rises about 2,000 feet above the level of the sea, to which it presents a nearly perpendicular precipitous face. . . . On the face of the mountain, at an elevation of several hundred feet, we observed some large patches of one of those beautiful large-flowered orchideous plants which are so common in Brazil. Its large rose-coloured flowers were very conspicuous, but we could not reach them. A few days afterwards we found it on a neighbouring mountain, and ascertained it to be Cattleya labiata. Those on the Gavea will long continue to vegetate, far from the reach of the greedy collector (pp. 21, 22).

Now comes the other locality just mentioned :—

We made an excursion to a mountain called the Pedra Bonita, immediately opposite the Gavea. . . . Near the summit of the Pedra Bonita there is a small fazenda, or farm, the proprietor of which was then clearing away the forest that covers it, converting the trees into charcoal. . . . On the edge of a precipice on the eastern side, we found, covered with its large rose-coloured flowers, the splendid Cattleya labiata, which a few days before we had seen on the Gavea (pp. 23–25).

This was in November, 1836. Gardner secured a few specimens for drying, and a ticket in his own handwriting states :—

It was with much difficulty and no little danger, that I could obtain about a dozen specimens of this, from the edge of a precipice on the Pedra Bonita Lynca. I collected, however, abundance of living plants (*G. G., Nov.*, 1836).

The clearing away of the forest mentioned by Gardner soon did its fatal work, and probably those on the Gavea did not "long continue to vegetate," in spite of their inaccessibility, for we learn that—

The following year, on my return from the Organ Mountains, I again visited this spot [the Pedra Bonita], and found that a great change had taken place. The forest, which formerly covered a considerable portion of the summit, was now cut down and converted into charcoal ; and the small shrubs and Vellozias which grew in the exposed portion had been destroyed by fire. The progress of cultivation is proceeding so rapidly for twenty miles around Rio, that many of the species which still exist will, in the course of a few years, be completely annihilated, and the botanists of future years who visit the country will look in vain for the plants collected by their predecessors (p. 25).

Until 1838, at least, the plant was fairly common in such collections as then existed, when we learn that—

Plants may be had from Messrs. Loddiges, Rollison, or Knight, at a reasonable cost (*Paxt. Mag. Bot.*, iv. p. 121).

But as soon as the plant was exterminated in the localities just named it gradually became rarer, though some of these very plants have remained in cultivation to this day, and are now interesting relics of a condition of things which has long since passed away.

Gardner found the plant in one other locality. On March 29, 1841, he was at the little hamlet of Sapucaya, on the banks of the Rio Parahyba, which forms the boundary of the provinces of Rio de Janeiro and Minas Geraes. He writes :—

On the stems of the trees I met with many fine orchideous plants, one of the most abundant, and certainly the most beautiful, being the Cattleya labiata (*Travels*, ed. 2. p. 410).

Even here the plants were not secure, for we read :—

In riding along, I could not help feeling deep regret that in these regions many square leagues of such forests were being cut down or burned, in order to make room for plantations of coffee (p. 409).

These records leave no doubt about the matters of which they speak. Many searches were made for the plant in and around the original localities, and so far the belief that the plant had been exterminated was well grounded. Its re-discovery in the province of Pernambuco is a happy event, and only proves that Orchids are not always so local in their distribution as commonly supposed. The only wonder now is that the new habitat was not discovered long ago. We need not now go into the controversial matters connected with its re-discovery, though we may add that there is no longer any doubt about the specific identity of the recent introductions with Lindley's original plant, and the recent names must be relegated to the rank of synonyms. In conclusion, we may hope that in one important matter history will not repeat itself, for it would be a calamity if so beautiful a plant should be exterminated in its native wilds.

HYBRID ODONTOGLOSSUMS.

(*Continued from page* 278.)

4. ODONTOGLOSSUM × GLORIOSO-LUTEOPURPUREUM.—As already pointed out, both Odontoglossum gloriosum and luteopurpureum readily hybridise with O. crispum, and we shall now see that they cross as freely with each other. This particular hybrid is fairly common in cultivation, and goes under a variety of names, as the following list will show.

Although both the parent species grow in company with O. crispum in the district around Bogota, they also extend some distance further north, as both are found in the neighbourhood of Ocaña. The exact area over which the hybrid is found is therefore a little doubtful, though presumably it may occur wherever the two parent species grow together.

This hybrid was second only to Odontoglossum × Andersonianum as regards its discovery, for it appeared with Messrs. Hugh Low and Co., of Clapton, as long ago as October, 1868, and soon afterwards it was described by Reichenbach under the name of Odontoglossum × mulus. Its author pointed out that it was intermediate between O. gloriosum and luteopurpureum, both in size, shape, and colour, and notably in the shape of the column-wings and crest of the lip; the vegetative organs being most like O.

luteopurpureum. The flowers are blotched with a dark brown on yellow ground. Almost immediately afterwards it appeared successively with the late Mr. Day, at Tottenham, M. J. Linden, of Brussels, and Messrs. James Veitch and Sons, of Chelsea.

Odontoglossum × cuspidatum was described very soon afterwards, from dried specimens collected by Roezl. The flowers are a little smaller than in O. × mulus, and approach rather nearer to O. gloriosum. The inflorescence is panicled, and the flowers yellow heavily blotched with chestnut-brown. The lip is rather narrower and more acuminate than in O. × mulus, and the ground colour very light yellow. It was afterwards met with by Messrs. Coradine and Chesterton, when collecting for Messrs. James Veitch and Sons, of Chelsea. Though described as a species, it is evidently a hybrid between the two species now under consideration.

Odontoglossum × histrionicum appeared in 1882, with Mr. William Bull, of Chelsea, and was compared with a light-coloured O. × mulus, the ground colour being sulphur-yellow. It is evidently derived from the same parentage.

Odontoglossum × tentaculatum appeared in the collection of Baron Schröder, of The Dell, Egham. Reichenbach described it as intermediate between O. × ligulare and O. × rubens, and remarked that it would be O. × Kalbreyeri, but for its tentacular bristles and column-wings. It is, however, clearly descended from O. luteopurpureum and O. gloriosum, and thus a variety of the present hybrid.

Certain varieties of the preceding types have also been described. For example, Odontoglossum × mulus Holfordianum is a large flowered form, with fewer blotches on the sepals and petals, which appeared in the collection of R. S. Holford, Esq., of Weston Birt, Tetbury, Gloucestershire. Bockett's variety is a handsome form, with the blotches on the petals narrower than usual, which appeared in the collection of John S. Bockett, Esq., of The Firs, Muswell Hill. O. × cuspidatum xanthoglossum appeared with Mr. B. S. Williams, of Upper Holloway, and chiefly differs in having a yellow lip.[1] O. × histrionicum bellum appeared with Messrs. Heath and Sons, of Cheltenham, in 1883, and is said to have all the tints of a lighter shade, especially the yellow ground.

This hybrid is evidently both common and variable, though the range of colour is not so great as in the preceding ones. The inflorescence is generally branched, as in both parents. The ground colour is generally deep yellow, as in O. luteopurpureum, though sometimes as light as in O. gloriosum.

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[1] Odontoglossum cuspidatum platyglossum, Rchb. f. (*Gard. Chron.*, 1888, ii. p. 91) is not a hybrid at all, but a variety of the polymorphic O. luteopurpureum. It was introduced by Mr. G. Kalbreyer, and is said to grow in an isolated spot, where no other Odontoglossum occurs. It has no right to the name cuspidatum.

The spots also are generally most like those of the first named. In shape, the range of variation is greater, as would be expected from the diversity between the two parents in this respect. Some forms are quite intermediate, others approach O. luteopurpureum in the breadth of the sepals, petals, and lip, as in O. × mulus, while the forms with narrower segments, ranked under O. × cuspidatum, more nearly approach O. gloriosum. In the crest of the lip and wings of the column, so different in the two parents, the same variation is seen.

The following is a list of the forms of this hybrid, with references to descriptions and figures:[1]—

Odontoglossum × mulus, *Rchb. f. Xen. Orch.*, ii. p. 151, t. 160, fig. 1, 2; *Id.* in *Gard. Chron.*, 1873, p. 432; *Id.*, 1883, i. p. 469, fig. 70; *Id.*, 1886, i. pp. 12, 13, fig. 4; *Warn. Sel. Orch.*, ser. 3, t. 28. O. luteopurpureum var. mulus, *Veitch Man. Orch.*, i. p. 46, with fig.

Bockett's variety, Pollett *Cat. Fernside Coll.*, i. p. 4, n. 20, t. 8, fig. 245; *Id.* ii. p. 8, n. 120, t. 7, fig. 102.

Var. Holfordianum, Rchb. f. in *Gard. Chron.*, 1882, ii. p. 616; *Orchid Album*, ix. t. 429.[2]

O. × cuspidatum, *Rchb. f. Xen. Orch.*, ii. p. 199, t. 184, fig. 1; *Id.* in *Linnæa*, xli. p. 27; *Lindenia*, iii. p. 9, t. 99. O. luteopurpureum var. cuspidatum, *Veitch Man. Orch.*, i. p. 45.

Var. xanthoglossum, Rchb. f. in *Gard. Chron.*, 1881, i. p. 428; *Orchid Album*, ix. t. 390.

O. × histrionicum, Rchb. f. in *Gard. Chron.*, 1882, i. p. 178. Var. bellum, Rchb. f. in *Gard. Chron.*, 1883, ii. p. 437.

O. × tentaculatum, Rchb. f. in *Gard. Chron.*, 1883, i. p. 814; *Veitch Man. Orch.*, i. p. 77; Pollett Cat. Fernside Coll., ii. p. 7, n. 111, t. 7, fig. 124.

ODONTOGLOSSUM × LINDLEYANO-LUTEOPURPUREUM.—Near the preceding, and less easily distinguished from it than might at first be imagined, is the hybrid between O. luteopurpureum and O. Lindleyanum, which hitherto does not appear to have been clearly defined, though more than one form is in cultivation which has evidently been derived from this particular cross.

That the two species grow together we have already seen, and not only is this the case in the district around Bogota, but probably much further north, as O. Lindleyanum, like O. luteopurpureum, occurs in various localities on the eastern Cordillera between Bogota and Ocaña, in some of which the two grow in company, and the facilities for intercrossing are therefore present.

There are two forms described by Reichenbach which I believe properly belong here, namely O. × acutissimum and O. × lepidum, though their exact parentage has been a matter of some doubt.

Odontoglossum × acutissimum appeared in 1882, in the collection of Dr. Wallace, of Lion Walk, Colchester, in an importation of O. crispum.

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[1] The omission of Odontoglossum × hinnus, Rchb. f. may be noticed, but I am convinced that it has quite a different parentage, as will hereafter be seen.

[2] The plant figured in the *Orchidophile*, 1885, p. 132, fig. 4, under this name is evidently quite different, and appears to be a variety of O. × Coradinei.

Reichenbach remarked, "If I were to guess, I might conjecture its descent from O. Lindleyanum and O. cristatum." The flowers are nearly orange, with a few large crimson bars, the crest of the lip with two plate-like keels and six to seven teeth on either side, and the wings of the column falcate-subulate and denticulate. The only combination capable of fulfilling all these conditions is the one we are now considering. O. cristatum grows far away in Ecuador, and is quite out of the question, while O. luteopurpureum would just as readily account for the characters of the hybrid.

Odontoglossum × lepidum is the other hybrid apparently derived from this parentage. It was imported from New Granada by Messrs. Shuttleworth and Carder, Park Road, Clapham, and flowered in their establishment in 1883. Reichenbach observed that "the column is much in the way of that of O. Lindleyanum: it is long, slender, with narrow wings," which was evidently one parent. "The flowers are nearly equal to those of O. cirrhosum." Lip hastate, with a long unguis and reniform apiculate blade. Callus, terminating in two recurved plates of nearly triangular shape with a tooth on each side. Flowers yellow at first, ultimately white with yellow edging; sepals with two or three cinnamon blotches, petals with but one; a similar spot stands on the lip before the keels, and the base shows some brown marbling.

I have not seen an authentic flower of either of these forms, but hybrids with this parentage have appeared in the collections of E. G. Wrigley, Esq., Howick House, Preston; W. Thomson, Esq., Walton, Stone, Staffordshire; and H. Grose Smith, Esq., The Priory, Ryde, Isle of Wight.

It may be distinguished from the preceding hybrid by its longer column with less toothed wings, the longer unguis of the lip, and an approach to the characters of O. Lindleyanum generally. In short, it almost combines the colours of O. × mulus with the shape of O. × Coradinei, except that in the shape of the lip it approaches O. luteopurpureum, as would naturally be expected.

The following are the forms of this hybrid, with references to descriptions. It has apparently not yet been figured:—

Odontoglossum × acutissimum, Rchb. f. in *Gard. Chron.*, 1882, i. p. 256.
O. × lepidum, Rchb. f. in *Gard. Chron.*, 1883, ii. p. 526.

R. A. R.

(*To be continued.*)

ODONTOGLOSSUM UROSKINNERI SEEDLINGS.

In the *Orchid Album*, vol. ix., t. 417, occurs a note that in the collection of H. J. Buchan, Esq., Wilton House, Southampton, "we saw the first seedling Odontoglossums which had been raised in this country; they had been obtained from Odontoglossum Uroskinneri without any efforts at

hybridisation, and were growing and doing well." One of these seedlings has now flowered in the collection of Major-General E. S. Berkeley, Spetchley, Bitterne Park, Southampton, and received an Award of Merit from the Royal Horticultural Society on October 10th last, under the name of O. Uroskinneri album. It differs from the type in having a pure white lip, and the sepals and petals yellowish green, obscurely marbled with a slightly darker tint, and thus the colour is almost that of O. bictoniense, though the shape is that of O. Uroskinneri, which is rather curious, and suggests the possibility of a hybrid between the two. Mr. T. Osborne, who was Mr. Buchan's gardener at that time, and raised the seedlings, says that he does not recollect crossing the O. Uroskinneri, but may have done so. He remembers, however, that the seed-pod fell on the moss under the plant, and he afterwards found the seedlings. The evidence is unfortunately not conclusive either way. If it is simply an albino of the species, other seedlings may prove normal in character, and we hope to hear of them as they flower. We believe an albino has not appeared before.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Continued from page* 243.)

An Orchid which flourishes well in the Phalænopsis house is Sarcochilus Berkeleyi, originally named by Professor Reichenbach Thrixspermum Berkeleyi, and described in the *Gardeners' Chronicle* for April 29, 1882. This is by far the best of all the Sarcochili, and is extremely distinct from any known kind. There is a very good figure of it in *Williams' Orchid Album*, t. 436. It has long drooping spikes of cream-white flowers with two small violet-blue spots at the base of the lip.

I first found this species in 1880, in the Island of Camorta. The plant has a drooping habit, and I invariably found it growing at the extreme end of the branches of large trees. Its long sprays of flowers, hanging down from the branches, had a charming effect at a distance, the trees on which it grew looked as if they were in flower, as the white stood out so distinctly from the green foliage.

This plant has practically no resting season in its native jungle, as the island of Camorta lies about 8° north of the Equator, in the belt of perpetual rains. It grows well in this country, if not checked or exposed to cold draughts. It should be grown in a hanging basket or pan, and placed in a position in the stove where no direct draught can catch it in the winter. It is very free flowering, and in its native home is in bloom more or less all the year round.

In the island of Camorta there is very little in the way of Orchids. I

found a Dendrobium there, closely allied to D. crumenatum, and a new Aërides, subsequently described by Professor Reichenbach as Aërides lepidum, in the *Gardeners' Chronicle* of April 14, 1883. This Aërides, though very distinct, is near to Aërides Emericii, but not so good.

Aërides Emericii was first described in the *Gardeners' Chronicle*, in 1882, and subsequently figured in the *Botanical Magazine*, t. 6728; which plate, however, does not do it justice, as I have seen the plant growing in the jungle with sprays over two feet in length. This plant is found on almost every island in the Andamans, not being confined to the three larger islands, and much to my surprise I found it at the Great Coco, an island about fifty miles distant from the North Andaman.

In the Great Coco I also found the very rare variety of Rhynchostylis called by Professor Reichenbach, Saccolabium Berkeleyi. This plant is undoubtedly distinct from its near allies, but after flowering it for several years in succession I have come to the conclusion that it is only an island form of Rhynchostylis retusa, and I do not consider the botanical difference sufficient to entitle the plant to a special name. There is, however, in this same group of islands (but not present in the Coco islands), and invariably found in all the islands small and large of the Andaman group, a lovely and quite distinct variety of Rhynchostylis, like the Burma variety Blumei but more elegant, which has one great thing to recommend it, as it is the earliest flowering of its section, blooming quite three months before the mainland forms.

There is no doubt that plants found in islands separated by long distances from the mainland have a tendency to considerable variation from their near allies, but this rule does not always hold good; in this case the two varieties of Rhynchostylis, one found at the great Coco, and the other throughout the Andamans, are quite distinct, and yet in the case of Aërides Emericii you have the same plant common to both groups of islands.

Another early flowering Saccolabium is also found in most of the Andaman islands, but more frequently on the small islands, and this plant is a variety of Saccolabium curvifolium, so common in Burma. The Andaman variety is, however, far superior in strength and habit, and the spikes are longer and quite different in colour; this being orange-scarlet, like the variety of S. miniatum found in Java, and not the brick-red of the Burman form.

The whole of the plants from these islands are essentially tropical, and all of them grow well in a stove temperature, but they do not like steam from evaporating troughs, the natural evaporation from damping down is sufficient, and in the autumn I find that they gain something they require from the evaporation of damp fallen oak leaves, which I always put under the stages as soon as I can collect them.

(*To be continued.*)

RODRIGUEZIA PUBESCENS.

THE subject of our illustration is a very beautiful plant, which was originally described in 1851 as Burlingtonia pubescens by Dr. Lindley, who remarked, "This beautiful novelty was exhibited at a meeting of the Horticultural Society in November last, when it received a Silver Medal. It formed a wide tuft of dark green rigid leaves, pouring forth from their bosom a profusion of bunches of snow-white blossoms. It had been sent to John Knowles, Esq., of Manchester, by some friends at Pernambuco." This was not its original appearance, as a plant flowered with Messrs. Loddiges in

Fig. 17. RODRIGUEZIA PUBESCENS.

November, 1846. For a long period it remained scarce; but among the recent importations from Pernambuco it has appeared in quantity, and is now represented in numerous collections. It has also been re-described under a new name. It is now so well known, that further description is unnecessary, though we may point out that it is readily distinguished from one or two allies by its pubescent column. Our illustration, which is from a photograph taken by R. Brooman White, Esq., of Arddarroch, gives an excellent idea of its grace and beauty. The flowers are snow-white, relieved by a bright yellow crest on the lip. We have also received another beautiful

photograph of it from C. Winn, Esq., The Uplands, Selly Hill, Birmingham. We have observed a curious character in the fruit. Some capsules on an imported plant were fleshy, and pure white in colour, like a snowberry—if normal, a most remarkable feature. It succeeds admirably when grown in baskets, in a mixture of potsherds and sphagnum, in the warm house. It requires abundance of water when growing, and should never be allowed to become dry at the root.

Rodriguezia pubescens, Rchb. f. in *Bot. Zeit.*, x. p. 771; Rchb. f. in *Walp. Ann.*, vi p. 694; *Lindenia*, vii. p. 39, t. 306.

Burlingtonia pubescens, Lindl. in *Paxt. Fl. Gard.*, I., p. 158.

Rodriguezia Lindeni, Cogn. in *Journ. d. Orch.*, III., pp. 10, 12, fig. 1; *Gard. Chron.* 1892, i. pp. 426, 427, fig. 60.

LÆLIO-CATTLEYA × GOTTOIANA.

On June 23, 1891, a very beautiful Orchid was exhibited at a meeting of the Royal Horticultural Society, by E. Gotto, Esq., of The Logs, Hampstead Heath, under the name of Lælia Gottoiana, and was awarded a First-class Certificate. It had been imported from Bahia, as Lælia tenebrosa. Soon afterwards a similar plant appeared with Messrs. James Backhouse and Sons, of York. And now one has flowered in the collection of R. H. Measures, Esq., The Woodlands, Streatham, which is believed to have come in an importation of Cattleya Warneri. The pollen masses are those of a Lælio-cattleya, and it is certainly a natural hybrid, of which Cattleya Warneri was evidently one parent and Lælia tenebrosa the other. Both the species have monophyllous pseudobulbs and an entire lip, in which respects the hybrid naturally agrees. The flower is about the size of Cattleya Warneri, but the petals are narrower and more acute, and their colour, as well as that of the lip, a nearly uniform bright rose-purple. The disc of the lip is rather darker in colour, but the yellow blotches on either side of the throat of the Cattleya parent are quite obliterated. It is a very handsome plant. For a long time this plant was a profound puzzle to me. Its hybrid origin was undoubted, but assuming the record that it was imported with Lælia tenebrosa to be correct, I could not account for its Cattleya parentage. This being indisputable, I suspected some mistake, and fancied Lælia Boothiana (lobata) and Cattleya Warneri might produce such a hybrid, yet the acute petals of L. × Gottoiana were inexplicable on this theory. But it is now evident that Cattleya Warneri also grows in Bahia, as will be seen on another page. It is very curious how many natural hybrids keep turning up, but it affords evidence of the way in which the pollen is carried about by insects, who evidently do not confine their visits to one particular species.

R. A. R.

LÆLIO-CATTLEYA × ALBANENSE.

This is another beautiful and extremely interesting plant, recently introduced from Bahia by Messrs. F. Sander and Co., of St. Albans, which has now flowered in their establishment. Here again one parent was evidently Cattleya Warneri, but the second was as clearly the true Lælia grandis—the plant with much smaller flowers, very undulate nankeen yellow sepals and petals, and a white lip regularly veined with rosy purple. Compared with Lælio-cattleya × Gottoiana the present hybrid has much smaller flowers, while the sepals, petals, and lip are much more undulate, so much so that before knowing the country it came from I thought of Lælia crispa. The sepals are linear-lanceolate, two and three-quarter inches long and three quarters of an inch wide, with revolute margins; the petals rhomboid, very undulate, and one and a half inches broad, and the lip two and a quarter inches long and crispo-undulate. The sepals and petals are light rosy mauve, the front lobe of the lip rosy crimson, and the disc purple-crimson, with some similar radiating veins extending towards the margin, which is rosy lilac. The whole plant is stamped with the characters of the two parent species. As in the case of Cattleya × Hardyana, the influence of the purple-flowered parent preponderates in the colour of the hybrid.

R. A. R.

THE HYBRIDIST.

Cattleya × Chloris.

This is a very handsome hybrid, raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons, of Chelsea, from C. Bowringiana ♀ and C. maxima ♂. It received a First-class Certificate from the Royal Horticultural Society on October 10th last. The flowers are five inches across, and the petals one and a half inches broad. The sepals and petals are bright rose-purple, and the lip deep purple-crimson with a lighter throat. In its free growth and numerous flowers it shows the character of the mother plant, also in its brilliantly coloured flowers, while the enhanced size and modified shape are derived from the pollen parent. It is a very charming hybrid.

Disa × Premier.

Another hybrid Disa has appeared, and a very pretty one too. It was raised at Kew, and received a First-class Certificate from the Royal Horticultural Society on October 10th last. The flowers are rather larger than those of D. racemosa and of a rich rosy crimson. It is a strong and

vigorous grower, and altogether a very promising plant. The parents are said to have been D. tripetaloides ♀ and D. × Veitchii ♂, though without this record one would have thought first of D. racemosa, both from the colour and structure. It is curious to note that one of the parents is itself a hybrid, which flowered for the first time in June, 1891.

THE NOMENCLATURE OF HYBRIDS.

Our attention has again been called to this rather difficult subject, and to the divergent methods at present followed by different people. Some there are who follow the florist's method, pure and simple, and give a distinct name to every different form, even if derived from the same seed-pod; as Cypripedium × pycnopterum and C. × porphyrospilum, both derived from the same capsule. Others consider all hybrids obtained from the same two species as forms of one, distinguishing any divergent forms by varietal names only, as Cypripedium × Harrisianum and C. × Harrisianum superbum. A reversed cross frequently receives a distinctive name. Thus we have Lælio-cattleya × Hippolyta and L. × Phœbe, both derived from Cattleya Mossiæ and Lælia cinnabarina. Cypripedium Lathamianum inversum is also an attempt to indicate a hybrid with reversed parentage which has little else to distinguish it. Again, the botanical rule of distinguishing a hybrid by the joint names of its parents has sometimes been followed, as in Cypripedium × javanico-superbiens and C. × venusto-Spicerianum; also C. × barbato-villosum and C. × Fairieano-insigne, two alternative names proposed by Reichenbach for C. × Harrisianum and C. × Arthurianum, respectively. A lack of brevity is perhaps the chief thing which can be urged against this method, and a modification of the system has recently resulted in such names as, Cypripedium × Lawrebel, C. × œno-superbiens, C. × conco-Lawre, C. × Lawre-conco, C. × Harrisi-froyæ, and Masdevallia × Shuttryana, one or two of which leave a lurking suspicion in the mind that brevity may sometimes be too dearly purchased.

In the latter connection the question has arisen whether the name of the male or female parent should be placed first, and in this matter an unfortunate diversity of practice exists. Thus Cypripedium × barbato-villosum means C. villosum crossed with the pollen of C. barbatum, or, to put it in its abbreviated form, C. villosum × barbatum. And C. × Fairieano-insigne means C. insigne × Fairieanum. C. × venusto-Spicerianum, however, does not mean C. Spicerianum × venustum, but just the reverse. And the same may be said of most of the compound names recently given. This diversity of practice is unfortunate, and, as a correspondent remarks, "renders it difficult to keep an accurate record."

The botanical rule, as adopted by the Paris Botanical Congress in 1867, is clear and explicit, and may here be reproduced, as set forth in Article 37 of the "Laws of Botanical Nomenclature:"—

Hybrids whose origin has been experimentally demonstrated are designated by the generic name, to which is added a combination of the specific names of the two species from which they are derived, the name of the species that has supplied the pollen being placed first with the final *i* or *o*, and that of the species that has supplied the ovulum coming next, with a hyphen between (*Amaryllis vittato-reginæ*, for the Amaryllis proceeding from *A. reginæ*, fertilised by *A. vittata*).

Hybrids of doubtful origin are named in the same manner as species. They are distinguished by the absence of a number, and by the sign × being prefixed to the generic name (× *Salix capreolata*, Kern.).

This was no new rule, but only a confirmation, as it were, of an old custom. The recent departure has apparently arisen through a misconception which may be explained thus:—In expressing the parentage of any hybrid the custom is to write the name of the seed parent first, followed by the sign ×, and lastly the name of the pollen parent. Thus—"Cypripedium venustum × Spicerianum," which is only an abbreviation of the phrase "Cypripedium venustum crossed with the pollen of C. Spicerianum." But in Latinising this, or, more correctly speaking, in forming a compound name for the hybrid from the joint names of its parents, the order must be reversed, and the name of the pollen parent placed first. Thus—"Cypripedium × Spiceriano-venustum." The transition of the abbreviated English phrase "C. venustum × Spicerianum" into the Latinised name "C. × venusto-Spicerianum" is easy, if the rule be ignored, though it is not correct.

The Nomenclature Committee of the Royal Horticultural Society recommended, *inter alia*, that—

Hybrids between species *raised artificially* should be named in Latin, with the addition of the word *hybridus,-a,-um*, or the sign of hybridity, ×.

Hybrids between varieties *raised artificially* should receive suitable vernacular names.

There is also a general recommendation that—

Names should be written so as to accord with botanical language and usage, and to conform with the laws of botanical nomenclature as adopted at the International Botanical Congress at Paris in 1867.

Thus the question of compound names would appear to be left open, but it is clear that if given they should be in accordance with the botanical rule.

Secondary hybrids are apparently not provided for, unless indeed they come under "Hybrids between varieties." In many cases one parent is a species, though in some both are of hybrid origin.

The whole subject apparently needs revision and simplification, and the following simple rules seem to us all that are necessary:—

1. It is desirable that plants of hybrid origin should be distinguished

from natural species on the one hand, and from simple varieties on the other, to which end the sign of hybridity, ×, should always be placed between the generic and specific names.

2. Hybrids between species should receive a Latin specific name, one formed by combining the names of the two parent species being used by preference. Hybrids raised from the same two species, whether of inverted parentage or otherwise, should be considered as forms of one, and if necessary may be distinguished by the addition of a varietal name.

3. Hybrids between genera should receive a generic name, formed by combining the names of the parent genera, reasonable abbreviation being permissible in certain cases.

4. Secondary hybrids, *i.e.*, those in which one or both parents are themselves of hybrid origin, should receive suitable vernacular or informal names, like florists' flowers.

A few explanatory remarks appear necessary on some of the points raised :—

1. The sign of hybridity is of primary importance, and should never be omitted. The word *hybridus,–a,–um*, is objectionable for two reasons. It necessitates the use of three words instead of two, while a variety can only be distinguished by the addition of a fourth (*e.g.*, Cypripedium hybridum Youngianum superbum, instead of C. × Youngianum superbum); besides which it is liable to be mistaken for a specific name.

2. This rule is purposely drawn so that a simple or compound name may be used. The latter, though it expresses a great deal, is frequently too long for ordinary use, especially when a varietal name is added. A Latin word should also be chosen, or at least one to which a varietal name can conveniently be attached, if necessary. Such a name, for example, as Cypripedium × Alice should only be used for a secondary hybrid, or in a florist's sense, as a varietal name could not well be added. No distinction should be made between natural and artificial hybrids, as a few take rank under both heads. And the attempt to distinguish those with reversed parentage is impracticable, as the difference is also inappreciable, and sometimes absolutely *nil*, as in Selenipedium × Sedeni, for instance. It is equally clear that in forming a compound name there is no need that either seed or pollen parent shall uniformly have priority of place. In the case of natural hybrids it is impracticable, as well as in some artificial ones. And if insisted on it would often lead to two names for the same thing, as in the Selenipedium just mentioned. It is sufficient to know that Cypripedium × venusto-Spicerianum is derived from the two species whose name it bears. Hybridists should, however, carefully note the seed and pollen parents of their hybrids, for which the sign ♀ and ♂, respectively, will be found very convenient. Any important variation should be distinguished by the addition of a varietal name.

3. This rule now seems to be almost pretty generally accepted.

4. The practice of treating secondary hybrids and those of doubtful parentage as florists' flowers, and of giving them vernacular names, has frequently been recommended, for reasons which are pretty well understood, and need not be repeated here.

We can only hope that some of these suggestions may be adopted, as we believe it would tend to lift the subject out of some of the confusion in which it has become involved.

CATTLEYA × PATROCINII.

In a Brazilian newspaper, the *Citade de Rio*, for May 28, 1890, an account was published by Visconde de Saint Leger of a Brazilian Cattleya, under the name of Cattleya × Patrocinii, which was stated to be a natural hybrid between Cattleya Loddigesii and C. guttata leopardina, and judging by the description given, which is in Portuguese, the parentage has been correctly recorded. In August of the same year a Cattleya, which had been imported from Rio de Janeiro two or three years previously, flowered for the first time, in the collection of Herr Rucker-Jenisch, of Flottbeck, Hamburg, under the care of the late Franz Kramer, who at once thought it must be a natural hybrid, with some such parentage as the above. It has also appeared with M. A. A. Peeters, of St. Gilles, Brussels, who received it from Brazil four years ago. It has flowered on three occasions, always in September and October, and this year it carries a raceme of seven flowers. M. Peeters states that the plant closely resembles C. Loddigesii in habit. The flowers show an unmistakable combination of the characters of the two parents. The sepals and petals are subequal, bright rose-purple, with many darker spots. The lip is three-lobed, nearly intermediate in shape, the side lobes acute, and yellowish white with a slight suffusion of rose, and the front lobe deep rose-purple. The column is pale lilac, its face yellow at the base and light rose-purple above. Thus the flower is most like C. guttata in shape, with the size and colour approaching C. Loddigesii, both, however, being somewhat modified, as hybrids always are. It is very distinct and beautiful.

R. A. R.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By W. H. White, Burford, Dorking.

The present month may be considered as the period at which the winter treatment of Orchids commences, and it is not only necessary to lower the

temperatures in the various compartments, but also to withhold atmospheric moisture to such an extent that the hygrometer shows a few degrees of evaporation. We find this instrument very useful, especially through the winter and during severe frosts, without which it is impossible to ascertain the exact state of the atmosphere so far as moisture is concerned. On referring to my note-book on observations taken last winter, I find that generally the first damping down in the morning brought the hygrometer to almost saturation point, but gradually diminished towards midday, when it showed 4° or 5° of evaporation. The afternoon's damping brought it to nearly saturation again, and by ten p.m. it showed 3°. During the night, when a large amount of fire-heat was necessary, it varied considerably, fluctuating between 2° and 5° of evaporation. These remarks refer to the warmer divisions only. The cool houses were nearly always within 3° of saturation. Owing to the diminishing heat and assistance obtainable from the sun, we shall, from now and for the next few months to come, be obliged to look to the heating apparatus to keep up the requisite temperatures in our Orchid houses, both by day and night. The winter temperatures and general directions given in the Calendar for January should be closely followed.

It is a true saying that the Orchid grower has innumerable enemies to contend with, both by day and night, and he must constantly be at war against them. One of the most destructive pests imaginable is the voracious cockroach, which eats off the tender points of the young roots, attacks the flower stems, often destroying the season's inflorescence in one single night. In consequence of the increasing need of artificial heat, these troublesome insects become exceedingly numerous, and as they multiply so plentifully they must, at any cost or extra labour, be kept in check, or a great deal of irreparable damage will soon be done. Before finishing up at night these insects should be diligently sought after with the aid of a good lantern, and every one that can be got at destroyed. Also bait them with beetle poison, of which there are several excellent kinds, though it is not advisable to lay it down every night, as they get so used to seeing it about that in a short time none of them will touch it. Two or three doses in a fortnight will be sufficient, occasionally substituting one kind of poison for another, which is very enticing to them. This change of food is oftentimes the means of destroying a great many. Cockroaches are particularly fond of the roots of Aërides, Saccolabiums, and Phalænopses, also the young leaves of Dendrobium Bensoniæ, for which reason these plants should be looked over with more than usual vigilance.

A few seasons back it was considered a rare treat to see the true old Cattleya labiata in bloom, but thanks to our energetic and persevering Orchid collectors, it has now become plentiful, so much so that we see it represented in almost every collection, whereas formerly only a few plants

existed in the country. At the present time this beautiful Cattleya forms one of the principal attractions in the Orchid houses, and if the atmosphere be kept a trifle drier than usual, the blooms will remain perfectly fresh for a period of four to five weeks, which is of the greatest importance to those who have to supply choice flowers for cutting purposes. As soon as the plants have done blooming, those that require potting should immediately be attended to, because in a very short time a quantity of young roots will start away from the base of the flowering bulbs, and if the operation be delayed until these have made any considerable progress, they are likely to be injured during the operation. After potting, insert two or three neat stakes in the pots, and tie the plants firmly to them, otherwise the young roots are sure to get damaged. Give only just sufficient water to keep the bulbs and leaves plump and fresh until new growth commences, when the quantity may be gradually increased.

Another specially desirable Orchid which blooms at this dull season is Cattleya Bowringiana. Although its individual flowers are smaller than the majority of Cattleyas, yet a plant with several spikes, each producing twelve or fourteen richly coloured blooms, is a most attractive sight. This species has usually proved to be of easy culture, no other treatment being required than that given to Cattleyas generally.

Those who have plants of the beautiful and distinct Cattleya Lawrenceana should pay special attention to them at this time of the year, as they are generally late in starting into growth, and the bulbs are only half formed when the dull days commence. As the sun-heat is now considerably less, the new growths take longer to mature, and therefore every encouragement should be given them to complete their early formation. Much depends upon this, as if they are not sufficiently ripened before winter proper sets in, small, weakly, immatured bulbs is often the result. Large specimen plants would be greatly benefited by being placed at the warmest part of the house, and raised on inverted flower-pots, so as to bring them nearer to the light. Smaller plants should be hung up close to the roof glass, where, if properly attended to, the bulbs quickly finish up and soon become thoroughly ripened. This Cattleya will take copious supplies of water during growth, provided the material used for the roots to grow in is of a very open nature, through which the water will pass freely. Every care must be taken that no water, either from drip or syringe, be allowed to remain in the young growths, or rot and decay is sure to appear, more often than not causing the total loss of the plant. When growth is completed, very little water is required to keep the bulbs plump, but immediately the flowers commence to push up through the sheath, more may be given. At no time should this plant be allowed to shrivel for want of moisture, neither should it be kept too wet, especially after flowering, or it will start into new growth instead of having a long rest.

The Pleiones, or Indian Crocuses as they are sometimes called, commence to produce their lovely little flowers about this period, and if care be taken that no water is allowed to settle on them, they will last long in perfection; but if not kept free from moisture the blooms quickly damp off. Within a fortnight after they have done flowering, numerous young roots will be found to have started away from the base of the new growths, and it is at this particular time that the plants should be turned out of their pots, the greater part of the old soil removed from the roots, and be repotted in a compost consisting of equal proportions of peat, loam, and sphagnum moss, with a sprinkling of coarse silver sand, mixing the whole well together. It is quite immaterial whether shallow pans or pots be used, but to those who prefer to grow their plants hanging up close to the roof, pans are the most convenient. In either case, whether pans or pots be selected, they should be well drained, for being fond of large quantities of water when the plants are in full growth, it is necessary that the water should pass freely away.

Instead of dividing the pseudobulbs and bedding them out as generally recommended, the best plan I have found is to keep them in clumps, about a dozen bulbs in a six-inch pot, the bulbs almost touching each other. By thus keeping them in clumps, the check seems to be much less, as often when the plants are in bloom they commence to emit young roots, and when the bulbs are separated these tender roots get so bruised and injured that they do not start away so readily again. After repotting they should be placed on a shelf or on inverted flower-pots, so as to expose them to the full sunshine, at the coolest and most airy part of the Cattleya or intermediate house. Water sparingly until the young growths are well advanced; but when the plants are thoroughly established they will take an almost unlimited supply, and an occasional dose of weak liquid manure water will be beneficial to them. On warm sunny days in spring and through the summer months these plants will be greatly benefited by well syringing up under the leaves two or three times a day, as by this means red-spider may easily be kept down, to the attacks of which Pleiones are liable. When the bulbs are made up, and the foliage commences to turn yellow, remove the plants from their growing quarters and hang them up in a vinery from which the grapes have been gathered, selecting a position where they will receive plenty of sunshine and an abundance of fresh air. The plants now being in a much drier atmosphere will require plenty of water at the root, to prevent the bulbs from shrivelling. Dryness at the root for any great length of time is a serious evil. Immediately the flower-buds are distinctly visible the plants may be taken to a warmer house, where the increased temperature will aid the proper development of the flowers. Pleiones, when treated in accordance with their requirements, are very easy to cultivate, and producing, as they do, such beautiful little flowers at this time of the year,

are very effective, and room should be found for them, even in the smallest Orchid collection.

Pleione flowers may easily be gathered, as by giving them a gentle pull they readily part from the young growths, the stem being much longer than when cut. The above treatment will be found suitable for such varieties as P. præcox, and its variety Wallichiana, P. Reichenbachiana, P. lagenaria, and P. maculata, the last named being, without doubt, the prettiest of the genus, its pure white sepals and petals contrasting beautifully with its yellow and magenta-coloured lip. Other varieties, such as P. humilis, P. Hookeriana, and its variety brachyglossa, which come from higher elevations, do best when suspended close to an open ventilator in the Odontoglossum house.

Odontoglossum Reichenheimii and citrosmum will by this time have completed their growth. The first-named plant should receive a sufficient quantity of water only to keep the roots and bulbs plump, but the latter requires a long and decided rest. Their satisfactory flowering depends very largely upon the treatment they receive during the resting season. Now that the growth of O. citrosmum is completed, gradually diminish the water supply, so that by the middle of December it may be discontinued altogether. Owing to the absence of moisture at the root, the bulbs will shrivel considerably, but this does not affect the welfare of the plants in the least; in fact, ours seem to benefit by it, as when the flowering period arrives, the plants are deluged with water, and the bulbs readily plump again to their normal condition, and scarcely a young growth, even from the smallest plants, ever fails to send forth its welcome flower spike.

There is not a more charming little plant under cultivation than Sophronites grandiflora, and it will soon be unfolding its glowing scarlet flowers. This plant being now so easy to obtain should be represented in every collection by several specimens, which, when the flowers open, brighten up the house in a way that few plants of its size can equal. The plants should be cultivated in well-drained shallow pans, so that they may be easily suspended close to the roof glass, using very little material about their roots. During this their season of growth, they need to be well supplied with water, and placed in the temperature of the intermediate house, as the little extra warmth will aid the blooms to expand with more freedom than if allowed to remain in the cooler division. When the flowers are fully open, the plants may be returned to the Odontoglossum house, where the blooms will retain their freshness and beauty for a long time. When growth is completed less water at the root will suffice, though the plants should never be allowed to become dust dry at any time, but kept fairly moist, even when at rest. S. grandiflora rosea and S. cernua require the same treatment, but I find that S. violacea does better when kept in the coolest part of the intermediate house throughout the year.

Carefully regulate the temperatures in each division as advised in former Calendars, and, above all things, guard against a hot dry state of the atmosphere, which is not only detrimental to the health of the inmates, but will encourage the propagation of innumerable insect pests, which cause so much devastation amongst plant life.

ORCHID PORTRAITS.

BOTANICAL MAGAZINE.

CYPRIPEDIUM MONTANUM, Dougl. A Western American species, much like the Eastern C. parviflorum, but with a white lip.—t. 7319.

PHALÆNOPSIS TETRASPIS, Rchb. f.—t. 7321.

THE GARDEN.

LÆLIA ANCEPS SCHRŒDERIANA.—September 23rd, p. 284, t. 928, fig. 1.

LÆLIA ANCEPS SANDERIANA.—Sept. 23rd, p. 284, t. 928, fig. 2.

GARDENERS' CHRONICLE.

CYPRIPEDIUM CHARLESWORTHII, Rolfe. (See page 303 of our October issue.)—Oct. 7th, p. 437, fig. 70.

ZYGOPETALUM LINDENI, Rolfe. A very handsome species of the Warscewiczella group, with pure white flowers veined with purple at the base of the lip.—Oct. 21st, p. 493, fig. 85.

JOURNAL OF HORTICULTURE.

CYPRIPEDIUM CHARLESWORTHII, Rolfe.—Oct. 5th, p. 307, fig. 43.

LINDENIA.

CYMBIDIUM GRANDIFLORUM, Griff., VAR. PUNCTATUM, Cogn. A variety with a few minute dots at the base of the sepals and petals.—t. 389.

ODONTOGLOSSUM TRIOMPHE DE RAMBOUILLET. A handsome variety of O. crispum, from the collection of M. Dallemagne, of Rambouillet, France. The sepals and petals are blotched with reddish purple, the ground colour being flushed with light rosy pink.—t. 390.

GALEANDRA CLAESII, Cogn. A very pretty species, imported from Brazil by Messrs. Linden, L'Horticulture Internationale, Brussels, through their collector, M. Claes. The racemes are slender and drooping, the sepals and petals are suffused and veined with brown, and the lip rose-purple and white.—t. 391.

CYMBIDIUM LOWIANUM, Rchb. f., VAR. SUPERBISSIMUM, Lind. A good form of a handsome species.—t. 392.

ORCHID ALBUM.

CATTLEYA CITRINA, Lindl. Block treatment is recommended for this

rather refractory subject, and during the summer a shady position in the Cattleya house, with abundance of water, but during the winter it should be kept cool and dry in the cool house.—t. 469.

ONCIDIUM PHYMATOCHILUM, Lindl. A rare but very graceful Brazilian species.—t. 470.

CYMBIDIUM LOWIANUM, Rchb. f.—t. 471.

ORNITHOCEPHALUS GRANDIFLORUS, Lindl. A very interesting little plant with white and green flowers.—t. 472.

REICHENBACHIA.

Part V. of Volume II. of the second series contains:—

ARACHNANTHE CLARKEI, Rolfe. A handsome species which grows at about 6,000 to 8,000 feet elevation in Sikkim.—p. 35, t. 65.

ZYGOPETALUM BURTEI, Rchb. f. A Costa Rican species, said to grow also in Ecuador. It is said to succeed well at St. Albans with a liberal allowance of heat, shade, water, and general atmospheric humidity, to a want of which the failure to grow this handsome plant is attributed.—p. 37, t. 66.

CATTLEYA × PARTHENIA, Bleu. A handsome hybrid, with white flowers, the disc of the lip bright yellow, and the front lobe light purple, not veined as in the original form.—p. 39, t. 67.

PHALÆNOPSIS SANDERIANA, Rchb. f. A richly coloured form with deep rose-coloured flowers.—p. 41, t. 68, fig. 1.

PHALÆNOPSIS × INTERMEDIA, Lindl., VAR. PORTEI, Rchb. f.—p. 43, t. 68, fig. 2.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By JOHN WEATHERS.

THERE was an interesting display at the Drill Hall, James Street, Victoria Street, Westminster, on September 26th. A Cultural Commendation was granted to a fine plant of Dendrobium Phalænopsis Schrœderianum, exhibited by E. Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire (gr. Mr. H. Holbrook).

W. E. Brymer, Esq., M.P., F.R.H.S., Ilsington House, Dorchester, exhibited a spike of the rare and beautiful Cattleya × Brymeriana, which has now been in cultivation just ten years.

The great sensation of the meeting was undoubtedly the appearance of a new and distinct *species* of Cypripedium, shown as C. Charlesworthii by Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford. It obtained a First-class Certificate, and as it was referred to at length at p. 303, it is unnecessary to describe it here.

W. Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Jones), exhibited a strong plant of Catasetum Gnomus with several flowers, which received a Botanical Certificate.

C. J. Ingram, Esq., F.R.H.S., Elstead, Godalming (gr. Mr. T. W. Bond), exhibited Lælia elegans Turneri Ingram's var. An Award of Merit was given, the flowers being large, and bearing an intense purple lip.

Messrs. W. L. Lewis and Co., Chase Side, Southgate, London, N., contributed a pretty group, containing several worthy novelties, of which Cattleya × Johnsoniana, and C. × Ashtoniana (both obtained from C. Harrisoniæ ♀ × C. Warscewiczii ♂, but differing in form and colour) may be particularly mentioned as something good. At the meeting on October 10th, the same firm obtained a Botanical Certificate for Habenaria cinnabarina, a Madagascar species, with heads of small vivid orange flowers speckled with red.

Messrs. Hugh Low and Co., of Clapton, exhibited a group this day, and also on the 10th of October, on which latter date a Silver Banksian Medal was awarded. Among the many species exhibited may be mentioned Vanda Kimballiana, Stanhopea Amesiana; the canary-yellow Dendrobium Lowii, with six rows of deep orange hairs on the lip; Saccolabium bigibbum, Cattleya Eldorado Wallisi, and several Cypripediums.

Messrs. P. McArthur and Co., Maida Vale, exhibited a collection in which were noticeable some beautiful forms of Vanda Sanderiana, Cattleya Harrisoniæ, Saccolabium cœleste, Oncidium Cebolleta, O. Jonesianum, and Stanhopea insignis.

Mr. James O'Brien, Harrow-on-the-Hill, exhibited specimens of Satyrium eriocarpum, S. membranaceum, and Brownleea cœrulea, which latter received a Botanical Certificate.

Messrs. Pitcher and Manda, Hextable, Swanley, exhibited the "Short Hills" variety of Cypripedium × radiosum.

On this occasion, and on October 10th (when a Silver Banksian Medal was awarded), Messrs. F. Sander and Co. sent collections in which were Lælio-cattleya × Sanderæ (L. xanthina ♀ × C. Dormaniana ♂), Oncidium bracteatum, O. trulliferum, Zygopetalum Klabochorum, and Z. Burtii, Phalænopsis Lowii, Lælio-cattleya × Kranzlinii (C. Mossiæ Wageneri ♀ × L. elegans prasiata ♂), Selenipedium × Coppinianum (S. × Sedeni ♀ × S. × conchiferum ♂), and Cypripedium × Cecilia (C. tonsum ♀ × C. Spicerianum ♂) — very much like C. × picturatum (C. Spicerianum ♀ × C. superbiens ♂) in appearance.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), exhibited flowers of such rarities as Cattleya × Parthenia, C. bicolor cœrulea, C. Alexandræ, and Cypripedium × Arthurianum superbum.

W. Thompson, Esq., F.R.H.S., Walton Grange, Stone, Staffs. (gr. Mr.

W. Stevens), sent a splendid spike of Cattleya Alexandræ—certainly the best flowers of this species yet shown in public.

Messrs. B. S. Williams and Son, Upper Holloway, N., exhibited Cypripedium × amandum (C. barbatum ♀ × C. Lawrenceanum ♂) and C. × Cythera (C. Spicerianum ♀ × C. purpuratum ♂) this day, and on the 10th of October received a Silver Banksian Medal for a group, in which Dendrobium superbiens—otherwise D. Goldiei—D. bigibbum, D. Phalænopsis, Pachystoma Thomsoniana, Miltonia Roezlii, Odontoglossum Harryanum, Cœlogyne speciosa, Cypripedium × Adonis (C. × Harrisianum superbum ♀ × C. Spicerianum magnificum ♂) were noteworthy.

In addition to those mentioned above were several other exhibitors on October 10th. The President of the Society, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), exhibited a pan two feet in diameter containing several glowing plants of Habenaria militaris, for which a Silver Flora Medal was awarded. Cypripedium × Lawrebel, with *two* lower sepals, and C. × conco-Lawre, with two flowers fused together like Siamese twins, were also shown, and excited much comment from lovers of the curious.

The Director of the Royal Gardens, Kew (W. T. Thiselton Dyer, Esq., C.M.G., F.R.S.), sent a new hybrid Disa named "The Premier," of which D. × Veitchii ♀ × D. tripetaloides ♂ are the parents. The flowers, of which five were fully expanded, are of a good size, and of a deep purple rose in colour. A First-class Certificate was awarded to the plant.

J. Forster Alcock, Esq., F.R.H.S., Northchurch, Great Berkhamstead, exhibited a good variety of Odontoglossum grande, Cattleya labiata and Cattleya bicolor, the purple lip of which latter had a very conspicuous white margin.

An Award of Merit was given to Odontoglossum Uroskinneri album, a form with a white lip and mottled greenish yellow sepals and petals, shown by Major-General Berkeley, F.R.H.S., Bitterne, near Southampton.

A form of Lycaste Skinneri was sent by W. C. Clark, Esq., F.R.H.S., Orleans House, Sefton Park, Liverpool.

F. Hardy, Esq., Tynterfield, Ashton-on-Mersey (gr. Mr. T. Stafford), exhibited flowers of a large and deeply coloured Lælia pumila præstans.

A. J. Hollington, Esq., F.R.H.S., Forty Hill, Enfield (gr. Mr. Ayling), exhibited a hybrid Cattleya very much like, if not identical with, C. × Ashtoniana, exhibited by Messrs. Lewis and Co., on September 26th, and a couple of Cypripediums.

Messrs. Linden, L'Horticulture Internationale, Brussels, received a Silver Flora Medal for an excellent group, out of which Cattleya Eldorado Lindeni, C. Warocqueana fascinator, Cypripedium × Spicero-Lowianum, and Lælia elegans Luciani, each received an Award of Merit. In addition to these may be mentioned a superb plant of Cypripedium Rothschildianum

with a scape two feet high, bearing four huge flowers, the tails of which were over six inches long; the graceful Warscewiczella Lindeni, a much finer plant than when it received a First-class Certificate in June, 1892; and Cattleya Eldorado Oweni, with a deep purple front to the orange-throated lip.

Messrs. J. Veitch and Sons, King's Road, Chelsea, obtained a First-class Certificate for Cattleya × Chloris (C. Bowringiana ♀ × C. maxima ♂), a beautiful hybrid with large deep rose-purple segments, and an intense purple lip with orange-barred throat. An Award of Merit was given to Cattleya × Pheidona (C. intermedia ♀ × C. maxima ♂), a soft lilac-coloured novelty with a lip conspicuously veined with purple. Cypripedium × Arthurium pulchellum (C. Fairieanum ♀ × C. insigne Chantini ♂), was also shown, and is much superior to the ordinary form.

A Bronze Banksian Medal was awarded to S. G. Lutwyche, Esq., F.R.H.S., for a large group, noticeable in which was a *Zygopetalum* Mackayi with forty flowers on six spikes; Lycaste Skinneri alba, varieties of Dendrobium Phalænopsis, and Miltonia Regnelli, Trichopilia fragrans, and several rare hybrid Cypripediums.

There will be three more meetings of the Society this year, viz., on November 14th and 28th, and December 12th, and at each of these gentlemen and their gardeners who are desirous of joining the Society and assisting in its work may be proposed as Fellows for the new year.

CORRESPONDENCE, &c.

W. S. E., Hazelbourne. Bollea Patini, a pale variety of B. Lalindei.

W. M. A., Weston-super-Mare. Phalænopsis Esmeralda, almost or quite the variety antennifera, Brassavola grandiflora, Odontoglossum nebulosum variety, Epidendrum paniculatum, and Dichæa species.

H. J. H., Edinburgh. Dendrobium dicuphum, Odontoglossum × cuspidatum, Lycaste Deppei, Phalænopsis amabilis and Cymbidium giganteum.

H. H., Whitby. A variety of Cypripedium × radiosum.

J. T., Ashford. It is difficult to say why the bulbs of Miltonia should have damped off when brought into the warm house, unless the sudden change of temperature was too great, or the compost in an unhealthy state, as the usual treatment seems to have been followed. We will try to ascertain. Meantime refer to Calendar of Operations for August.

T. C. H., Richmond. Many thanks: next month.

P. & M., New Jersey. Photograph received. with thanks, of Cypripedium × Allanianum.

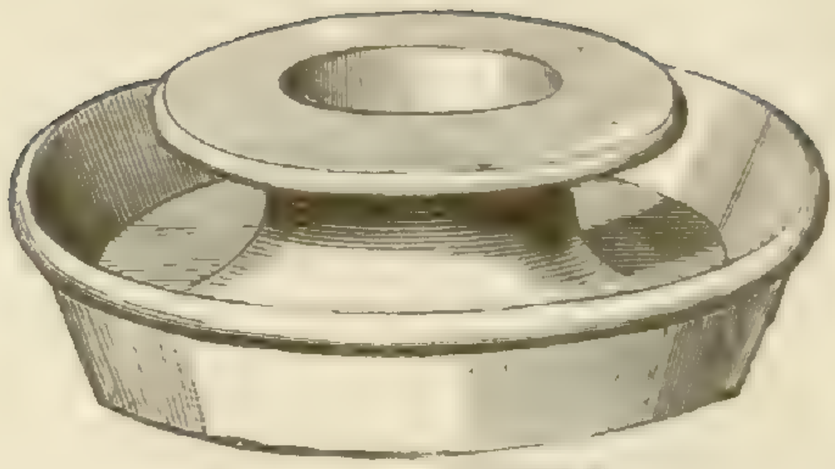
E. A., Wilmslow. Cattleya Gaskelliana, a handsome light-coloured form.

C W., Selly Hill. Photographs of Cymbidium × Winnianum and Cypripedium × Juno received, with thanks.

O. O. W., Bury. A variety of Cypripedium × Eyermanianum.

W. H. L., Birmingham. Catasetum Wailesii, a green variety of C. maculatum.

TO LET.



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VOL. I.] DECEMBER, 1893. [No. 12.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED EXCLUSIVELY TO ORCHIDOLOGY IN ALL ITS BRANCHES.

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THE ORCHID REVIEW.

VOL. I.] *DECEMBER*, 1893. [No. 12.

NOTES.

THE Royal Horticultural Society will hold its last meeting of the year on December 12th, when the Orchid Committee will meet at the usual hour.

Messrs. B. S. Williams and Son, of the Victoria and Paradise Nurseries, Upper Holloway, inform us that they intend to publish a new and much enlarged seventh edition of the *Orchid Growers' Manual* early in the new year. The size is large octavo, and there will be numerous additional illustrations.

A new work of 800 pages is announced, entitled *Les Orchidées Exotiques et Leur Culture en Europe*, by M. Lucien Linden, editor of the *Journal des Orchidées*, to be issued at the beginning of next year.

At the same time we learn that the *Journal des Orchidées* will be suspended for a year or two, at the end of the present volume; that is on the first of March next.

Our article on the "Nomenclature of Hybrids" (p. 340) has called forth some discussion on the subject. The *Gardeners' Chronicle* (p. 627), thinks that there is "a great deal to be said in favour of a purely vernacular system of naming," and considers it "undesirable to mix up the history of a plant with its name, and to complicate matters by a cumbrous and embarrassing system of nomenclature."

The former point is not in accordance with the recommendations of the Royal Horticultural Society's Nomenclature Committee, which we thought

had been pretty generally accepted—in principle at least, if not always in practice.

A purely vernacular system, for example, would give us three separate names, for Cypripedium × Leeanum, C. × L. superbum and C. × L. giganteum, but we fail to see where the improvement comes in. Nothing could well be more embarrassing than the diversity of practice which now prevails, and the recent development of the use of compound names in gardens is probably due to the fact that they give some clue to the origin of a hybrid.

The Rev. R. Baron, the well-known explorer of Madagascar, has published in the *Standard* newspaper, and also in the *Gardeners' Chronicle*, a letter respecting M. Hamelin's published account of the discovery of Eulophiella Elisabethæ, and describes "most of the statements made" as "purely imaginary," and "largely or entirely pure romance."

Our present number completes the volume for the year, and contains the title-page and index, consequently the matter for the present month is somewhat curtailed. We call attention to a notice on the last page with regard to our future arrangements, and hope for increased support during the coming year.

LENGTH OF LIFE IN PHALÆNOPSIS.

A discussion has recently taken place in the *Gardeners' Chronicle* on the above subject. Speaking of the difficulty of forming large vigorous plants here at home, Mr. Sidney Courtauld (p. 458) relates how a well-known collector told him that in their native country the duration of their life does not exceed a few years. To this Major-General E. S. Berkeley replies (p. 532) that he has seen thousands of plants in a wild state, and some of extraordinary age and dimensions, such as would scarcely be believed by growers at home, and cites his notes on Phalænopsis tetraspis in our columns (p. 209) in corroboration. "I feel quite convinced," he remarks, "that I have seen many plants one hundred years old. . . . I have healthy plants now in my Phalænopsis house collected by me in 1880." His method of culture is detailed at pp. 209 and 242 of our columns. Mr. W. Holmes also speaks of plants of P. Schilleriana, amabilis, grandiflora, Stuartiana and violacea, that were in the Pickering Lodge collection long before he took charge of it twelve years ago, and though flowering every year are now larger than ever. We quite agree with these writers that Phalænopsis are not at all short-lived plants, and under proper treatment may be grown for almost indefinite periods.

CYPRIPEDIUM CHARLESWORTHII, *Rolfe.*

(See page 355.)

CYPRIPEDIUM CHARLESWORTHII.

(*See* FRONTISPIECE.)

WE are now able to present our readers with a coloured plate of the new and beautiful Cypripedium Charlesworthii, which was noticed some time ago in our pages (p. 303). It came as a great surprise, for no one imagined that so fine and distinct a species remained undiscovered in our great Indian Empire. It is trùe that many districts are yet very imperfectly explored, and that the habitat of the remarkable Cypripedium Fairieanum still remains a mystery. But the appearance of a species with a rose-coloured dorsal sepal could scarcely have been anticipated; at least in the particular group to which it belongs. It was the sensation of the Royal Horticultural Society's meeting on September 26th last, when it was unanimously awarded a First-class Certificate by the Orchid Committee, and was universally admired. As already pointed out, its nearest ally is C. Spicerianum, though in many respects the two are very different. In habit and general character of the vegetative organs they are much alike, but the purple-brown streaks on the under side of the leaves of the present one extend further from the base, in some cases beyond the middle. The scapes, too, are a little shorter. The *pièce de résistance* is the dorsal sepal, which is suffused with light soft rosy purple, a little marbled with white towards the apex, and the nerves generally a little darker than the ground colour. In shape it is nearly orbicular, flat or at length a little concave, and two and a quarter inches in diameter. The petals are linear-oblong, flat, one and a quarter inches long, and greenish yellow somewhat nerved with light brown. The lip is as long as the petals, and rather similar in colour. The staminode is another very distinct feature. It is ivory-white or nearly porcelain-white, with a curved light yellow horn-like tooth near the apex. It is likely to become just as popular as C. Spicerianum, not only as a decorative plant, but also for hybridisation purposes. To the hybridist it should prove a great acquisition, for it presents a colour which has been much sought after, and its handsome dorsal sepal is sure to originate some striking developments, when crossed with other richly coloured forms. Altogether we may predict that so handsome a species will become a general favourite. It is an autumn-bloomer, and no doubt will succeed under the same treatment as C. Spicerianum. The few flowers which have already expanded indicate a certain variability in colour. Our plate represents the darkest form which has appeared. This fine species has been introduced by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford, who are now sending it out. Next autumn, when the plants have had time to become established, a general flowering may be anticipated. It is probable that we have not yet witnessed its full development.

Cypripedium Charlesworthii, Rolfe in *Orchid Review*, I. p. 303; *Journ. of Hort.*, 1893, ii. p. 307, fig. 43; *Gard. Chron.*, 1893, ii. p. 437, fig. 70.

HISTORY OF ORCHID HYBRIDISATION.

PART XI.

(*Concluded from page* 328.)

A LARGE number of hybrids appeared during 1892, many of them being very distinct and beautiful, though no new genus was added to the list.

Sophro-cattleya × Veitchiana is perhaps one of the most interesting. It was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from Sophronitis × grandiflora ♀ and Lælio-cattleya × Schilleriana ♂, and thus three genera were concerned in its parentage. In this respect it would appear to establish a record. It is convenient to refer the plant to Sophro-cattleya, though perhaps not strictly correct. Like S. × Batemaniana and S. × Calypso, it is very beautiful.

Cymbidium × Winnianum, the second hybrid in the genus, is another very interesting plant. It was raised in the collection of Charles Winn, Esq., the Uplands, Selly Hill, Birmingham, from C. giganteum ♀ and C. eburneum ♂; whose characters it well combines. It is described at p. 22.

Epidendrum × Endresio-Wallisii is a pretty little hybrid, raised by Messrs. Veitch, from E. Wallisii ♀ and E. Endresii ♂, two species not before used by the hybridist. In habit it most resembles the latter. Its characters are pointed out at p. 104.

Zygopetalum × leucochilum was also raised by Messrs. Veitch. Its parents are recorded as *Z.* Mackayi ♀ and *Z.* Burkei ♂, and thus it was the first hybrid derived from the latter.

Phaius × hybridus is a bold and handsome hybrid, raised in the collection of D. O. Drewett, Esq., of Riding Mill-on-Tyne, Northumberland, from P. grandifolius ♀ and P. Wallichii ♂. The reverse cross is figured on p. 241.

Phalænopsis × Artemis was derived from P. amabilis, Blume (grandiflora) ♀ and P. rosea ♂, and bears considerable resemblance to P. × intermedia. It was raised by Mr. Seden in Messrs. Veitch's establishment.

Phalænopsis × Amphitrite was raised by Messrs. F. Sander and Co., of St. Albans, from P. Sanderiana ♀ and P. Stuartiana ♂, whose characters it well combines.

Masdevallia × Cassiope is a very interesting little hybrid, raised by Captain Hincks, Terrace House, Richmond, Yorks, from M. triangularis ♀ and M. Harryana ♂, two species which belong to very different groups.

Masdevallia × Shuttryana was raised in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, from M. Shuttleworthii ♀ and M. Harryana ♂. The specific name is intended to indicate the parentage.

Masdevallia × McVittiæ is a very pretty little hybrid, raised in the collection of W. Thompson, Esq., Walton Grange, Stone, Staffordshire, it is said from M. tovarensis ♀ and Veitchiana ♂, though the characters of the

plant suggest a form of M. coccinea as the pollen parent. It is said to have been some twelve or fourteen years old before it flowered. It is described at p. 22.

Cattleya × Philo was raised in the establishment of Messrs. Veitch, from C. Mossiæ ♀ and C. iricolor ♂, and thus was the first hybrid derived from the latter rare species. The variety albiflora was also raised from the same cross. Both are very handsome.

Cattleya × Burberryana was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, it is said from C. × intricata ♀ and C. superba ♂. It is a very handsome hybrid.

Cattleya × Minucia was derived from C. Loddigesii crossed with the pollen of C. Warscewiczii. It was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea.

Cattleya × leucoglossa was also raised by Messrs. Veitch, the parents in this case being C. Loddigesii ♀ and C. × fausta ♂. It is a chaste and very beautiful hybrid.

Lælia × Latona is a handsome hybrid descended from L. cinnabarina ♀ and L. purpurata ♂. It is another of Mr. Seden's productions.

Lælia × Oweniana is a very pretty hybrid raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from L. pumila Dayana ♀ and L. xanthina ♂, and thus appears to have been the first hybrid derived from the latter.

Lælio-cattleya × Baroness Schröder is a very handsome hybrid which was raised in the collection of Baron Schröder, The Dell, Egham, from C. Trianæ ♀ and Lælia Jongheana ♂. Cattleya dolosa has also been recorded as the pollen parent, but this is evidently a mistake.

Lælio-cattleya × Marriottiana is a handsome hybrid of novel colour, raised in the collection of Sir William Marriott, Down House, Blandford, from Lælia flava ♀ and Cattleya Skinneri ♂, neither of which appear to have been previously used by the hybridist.

Lælio-cattleya × Ingrami was raised in the collection of C. Ingram, Esq., of Godalming, from Lælia pumila Dayana ♀ and Cattleya Dowiana aurea ♂. It is a very handsome form.

Lælio-cattleya × claptonense was raised in the establishment of Messrs. Hugh Low and Co., of Clapton, from Lælio-cattleya × elegans ♀ and Cattleya Dormaniana ♂, and thus appears to be the first hybrid raised from the latter.

Lælio-cattleya × Phœbe was raised in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from Cattleya Mossiæ ♀ and Lælia cinnabarina ♂, and thus is the reversed of Lælio-cattleya × Hippolyta raised by Messrs. Veitch (p. 292).

Six hybrid Dendrobiums appeared during 1892, as follows :—

D. × Rolfeæ is a handsome hybrid raised in the establishment of Messrs.

F. Sander and Co., of St. Albans, from D. primulinum ♀ and D. nobile ♂, and is probably the first hybrid derived from the former.

D. × Nestor was raised in the collection of C. Winn, Esq., of The Uplands, Selly Hill, Birmingham, from D. Parishii ♀ and D. superbum ♂.

The remaining four were raised in the establishment of Messrs. James Veitch and Sons, of Chelsea :—

D. × Euryclea is a handsome hybrid derived from D. lituiflorum ♀ and D. Wardianum ♂.

D. × dulce is descended from D. aureum ♀ and D. Linawianum ♂, and is a very pretty little plant.

D. × striatum was derived from D. moniliforme (japonicum) ♀ and D. pulchellum (Dalhousieanum) ♂, two species belonging to two quite different groups.

D. × Adrasta, the last of the group, was derived from D. Pierardii ♀ and D. superbum ♂, and thus is the first hybrid derived from the former.

Six Selenipediums also appeared, as follows :—

S. × Brysa was raised in the establishment of Messrs. James Veitch and Sons, of Chelsea, from S. × Sedeni candidulum ♀ and S. Boissierianum ♂, and is a handsome hybrid.

S. × Perseus is another very pretty form, raised in the same establishment as the preceding, from S. × Sedeni porphyreum ♀ and S. Lindleyanum ♂, and is specially interesting as the first hybrid derived from the latter.

S. × Baconis was raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from S. × chlorops ♀ and S. Schlimii ♂.

S. × Edithæ appeared in the same establishment as the preceding, and is descended from S. × conchiferum ♀ and S. Schlimii albiflorum ♂.

S. × Elsteadiana was raised in the collection of C. Ingram, Esq., of Godalming, from S. × conchiferum ♀ and S. × grande ♂, and is an interesting form.

S. × Hardyana was raised in the collection of G. Hardy, Esq., of Timperley, Cheshire, from S. caudatum ♀ and S. × Ainsworthii ♂. It is near S. × grande and S. × macrochilum, and has been considered synonymous with the latter, though the parentage is certainly different.

The remaining hybrids of 1892 were Cypripediums, and, as usual, form a rather numerous group :—

From the establishment of Messrs. James Veitch and Sons, of Chelsea, appeared :—

C. × Adrastus, a handsome hybrid derived from C. × Leeanum ♀ and C. Boxallii ♂.

C. × Tityus, another promising thing, derived from C. Spicerianum ♀ and C. × œnanthum superbum ♂.

C. × Ianthe, derived from C. × Harrisianum ♀ and C. venustum ♂.

C. × Evenor, a very interesting form, derived from C. Argus ♀ and C. bellatulum ♂.

C. × Arthurianum pulchellum, derived from C. insigne Chantini ♀ and C. Fairieanum ♂.

C. × Telemachus, derived from C. niveum ♀ and C. Lawrenceanum ♂, and thus a variety of C. × Aphrodite (p. 262).

C. × eurylochus, derived from C. ciliolare ♀ and C. hirsutissimum ♂. A prettily spotted form.

C. × Crethus, derived from C. Spicerianum ♀ and C. Argus ♂.

From the collection of C. Ingram, Esq., of Godalming, appeared the five following :—

C. × gigas, a fine hybrid derived from C. Lawrenceanum ♀ and C. × Harrisianum ♂.

C. × Hecla, derived from C. × superciliare ♀ and C. × Swanianum ♂.

C. × Bijou, descended from C. × œnanthum ♀ and C. Lawrenceanum ♂.

C. × The Gem, derived from C. × marmorophyllum ♀ and C. insigne Chantini ♂.

C. × La Nymphe, derived from C. × œnanthum ♀ and C. × Dauthieri ♂.

The three following appeared in the establishment of F. Sander and Co., of St. Albans :—

C. × G. S. Ball, derived from C. Spicerianum ♀ and C. Lawrenceanum ♂.

C. × Ashworthii, descended from C. × plunerum ♀ and C. Spicerianum ♂.

C. × Mrs. C. D. Owen, derived from C. × superciliare ♀ and C. villosum ♂.

Three others appeared in the collection of C. Winn, Esq., The Uplands, Selly Hill, Birmingham :—

C. × Edith Winn is a very pretty hybrid, descended from C. Stonei ♀ and C. purpuratum ♂.

C. × Cleopatra was derived from C. Hookeræ ♀ and C. × œnanthum superbum ♂.

C. × Ensign was derived from C. × Harrisianum ♀ and C. barbatum ♂, and thus has three-fourths blood derived from the latter species.

The remaining ones were as follows :—

C. × Lawrebel is a handsome hybrid, raised in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, from C. Lawrenceanum ♀ and bellatulum ♂.

C. × Bryani was raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, from C. philippinense ♀ and C. Argus ♂. It is a handsome hybrid.

C. × Cowleyanum is a very charming little plant, raised in the collection of G. F. Tautz, Esq., Dibdin House, Hanger Hill, Ealing, from C. Curtisii ♀ and C. niveum ♂.

C. × Parksianum, descended from C. Spicerianum and C. × marmoro-

phyllum, was raised in the collection of H. M. Pollett, Esq., of Fernside, Bickley.

C. × Leda was raised in the collection of John C. Bowring, Esq., Forest Farm, Windsor Forest, from C. × Harrisianum ♀ and C. venustum ♂.

C. × Daisyæ, which appeared in the collection of H. Graves, Esq., Orange, New Jersey, U.S.A., was obtained from C. Lowianum ♀ and C. × œnanthum superbum ♂.

C. × decorum, raised in the collection of M. Jules Hye-Leyssen, of Ghent, Belgium, is said to have been derived from C. × Sallieri Hyeanum and C. Lawrenceanum.

We have now brought our record down to the end of 1892, where we may conveniently leave it, as the hybrids of the present year are already recorded in our columns. Nearly four hundred distinct hybrids have been traced, belonging to the principal cultivated genera, and a few others have probably been overlooked owing to the irregular way in which they have been recorded. We do not here attempt a summary, but in succeeding numbers we intend to take the genera singly, and tabulate the results obtained in each, in a form suitable for ready reference, so as to show not only what has been done, but what remains to be accomplished in this interesting field.

Large as the number of artificial hybrids has now become, it is certain to be largely increased during the next few years, by the hundreds of unflowered seedlings now in various collections, not to mention new crosses which are continually being made. The possibilities of improvement in various directions—in size, shape, and colour of flower, increased floriferousness, and vigour of constitution—seem almost unlimited, especially if crossing is undertaken with some definite object in view, and accompanied by judicious selection. Secondary hybrids are especially promising in this connection, as from these plants of mixed parentage some interesting developments are sure to arise, to enhance the beauty of our collections.

CATTLEYA LABIATA ELEGANS.

This is a most beautiful variety of Cattleya labiata, which was briefly mentioned at pages 8 and 329. The sepals, petals, and side lobes of the lip are pure white, but the front lobe of the lip is of a brilliant purple-crimson with a broad white margin. Behind this the disc is veined with reddish maroon, and the usual yellow blotches occur on either side of the throat. The plant is in the collection of T. R. Watt, Esq., of The Briars, Chislehurst. Last year it produced two flowers, but this year it has borne eight, on three spikes. The flowers are large, well-formed, and exceedingly handsome, and the bright crimson front lobe of the lip contrasts with the white sepals and petals in a most effective manner. It appeared in one of the importations of Messrs. F. Sander and Co., of St. Albans.

CYMBIDIUM × WINNIANUM.

CYMBIDIUM × Winnianum is a very distinct and handsome hybrid, raised in the collection of Charles Winn, Esq., The Uplands, Selly Hill, Birmingham, from Cymbidium giganteum crossed with the pollen of C. eburneum. Two plants were raised, one of which is now in Mr. Winn's collection; the other has been acquired by Messrs. F. Sander and Co., of St. Albans. Our illustration is reproduced from a photograph kindly forwarded by Mr. Winn. Messrs. Sander's plant received a First-class Certificate from the Royal Horticultural Society on November 1st, 1891, the plant then carrying five racemes, of from five to ten flowers each. It shows the usual combination

Fig. 18. CYMBIDIUM × WINNIANUM.

of characters of the two parent species. The leaves are long and gracefully arching, in which they much resemble the pollen parent. The racemes are rather shorter than the leaves, and bear numerous flowers, having a general resemblance to those of C. giganteum in shape, though the colour is much lighter, and the segments are rather more spreading. The sepals and petals are ivory-white or nearly pale straw-coloured, and the lip is beautifully spotted with crimson, which forms an effective contrast with the rest of the flower. Our illustration shows well the general habit of the plant, which is evidently a free grower and very floriferous, so that it is likely to become popular in gardens. It will succeed under the treat-

ment given to C. Lowianum. It is the second hybrid in the genus, the first being C. × eburneo-Lowianum, raised by Messrs. James Veitch and Sons, of Chelsea, which has larger flowers and an unspotted lip. In both cases C. eburneum was the pollen parent.

Cymbidium × Winnianum, *Gard. Chron.*, 1892, ii. p. 366; *Orchid Review*, i. p. 22; *Veitch Man. Orch.*, ix. p. 24.

NOVELTIES.

Bulbophyllum Ericssoni, Kranzlin.—A striking species bearing an umbel of from nine to twelve flowers, like those of a Chimæroid Masdevallia. Their colour is yellowish white, heavily spotted with dark brown, except the lip, which is red. It was discovered by Mr. Ericsson, a collector for Messrs. F. Sander and Co., of St. Albans.—*Gard. Chron.*, October 28th, p. 527.

Bulbophyllum longispicatum, Cogn.—A Brazilian species, allied to B. vittatum, Rchb. f. et Warm., and B. Sanderianum, Rolfe, introduced by Messrs. Linden, L'Horticulture Internationale, Brussels. The flowers are green spotted with brown.—*Journ. des Orch.*, November 15th, p. 265.

Catasetum Imschootianum, L. Lind. et Cogn.—Introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, from Brazil. It is allied to C. Hookeri, Lindl., and has light yellowish green flowers.—*Journ. des Orch.*, November 15th, p. 266.

Catasetum Claesianum, L. Lind. et Cogn.—A species allied to C. discolor, Lindl., of the section Pseudocatasetum, and of the same origin as the preceding. The flowers are light yellowish green.—*Journ. des Orch.*, November, 15th, p. 267.

CYPRIPEDIUM INSIGNE ERNESTI.

This superb variety is very nearly allied to C. insigne Sanderæ. It has the same shape and colour, but the spots on the dorsal sepal are more clearly defined and they extend into the white area as very light purple markings. Briefly it is a yellow insigne of the Maulei type in which the spots are not quite obliterated. A plant was exhibited by R. I. Measures, Esq., of Cambridge Lodge, Flodden Road, Camberwell, at the Drill Hall, on November 14th, side by side with the variety Sanderæ. Both are equally beautiful; some would consider them forms of one, but they differ in the characters just pointed out. There is one other yellow variety of this species, namely Macfarlanei (Rolfe in *Gard. Chron.*, 1890, ii. p. 655), in which the dorsal

sepal is nearly half an inch narrower, more regularly margined with white, and the petals distinctly narrower. The colour is that of Sanderæ, but a shade deeper and quite unspotted.

These plants are among the most valuable in the genus. Sanderæ appeared as a single plant in 1888, in the establishment of Messrs. F. Sander and Co., of St. Albans. It was divided, and half of it was acquired by Baron Schröder for 70 guineas, the other half being secured by Mr. R. H. Measures. The latter was afterwards divided into four, one piece passing into the collection of Mr. R. I. Measures, a second into that of Mr. F. L. Ames, and a third was acquired by Messrs. Sander for £250. It is one of the celebrated "montanum" forms, from which several distinct varieties have appeared, and Ernesti is evidently of the same origin.

THE HYBRIDIST.

Cattleya × Pheidona.

After an interval of thirty-four years, a second hybrid between Cattleya maxima and C. intermedia has flowered, and both in the establishment of Messrs. James Veitch and Sons. The first, C. × Dominiana, was raised by Mr. Dominy, C. maxima being recorded as the seed parent. It flowered in 1859. The present one is the reversed cross, C. intermedia being the seed parent. It was raised by Mr. Seden, and has received the above name. Both are fairly intermediate in shape, but in colour, curiously enough, each hybrid most resembles the pollen parent. In C. × Dominiana the flowers are blush white or very pale blush pink, and the disc of the lip, like C. intermedia, almost without markings; but in C. × Pheidona the lip is beautifully veined all over, in which respect it resembles C. maxima. The whole of the disc is buff-yellow, with numerous radiating veins of a reddish maroon shade; and the front lobe and margins of the side lobes, like the sepals and petals, are delicate blush or pale mauve-pink, the former being veined with purple-crimson, except near the margin. The colour and veining of the lip gives to the flower a very attractive appearance. We learn that the plant has passed into an American collection.

Lælio-cattleya × Sanderæ.

This is a new hybrid raised in the establishment of Messrs. F. Sander and Co., of St. Albans, from Lælia xanthina ♀ and Cattleya Dormaniana ♂. A plant was exhibited at a meeting of the Royal Horticultural Society on September 26th last, which had evidently not reached its full development, as it bore only a single flower. It bears most resemblance to the mother plant. The sepals and petals are greenish yellow and the lip white, the front lobe being flat, and dark rose-coloured.

Cypripedium × Tennyson.

A new hybrid of graceful form, raised from C. × œnanthum superbum ♀ and C. Dayanum ♂. The flowers are compared with those of a light form of C. × Harrisianum. The upper sepal is white, tinged with green below and lined with purple two-thirds of the way to the apex; the petals are ciliate, light rose on the outer half, darker on the inner one; the lip somewhat similar in colour, and the staminode clear yellow. The stock is in the possession of Mr. P. McArthur, of Maida Vale.—O'Brien in *Gard. Chron.*, Oct 21st, p. 490.

NURSERY NOTES.

The rockwork at the Royal Exotic Nursery is almost always brightened up with interesting Orchids. At the present dull season the Oncidiums are very effective, and comprise O. crispum, Forbesii, varicosum, excavatum, cheirophorum, tigrinum, and others. A fine plant of Cœlogyne barbata carries no less than fifteen spikes, and numerous flowers. Many other well-known things are also in flower. The hybrid Cypripediums, for which Messrs. Veitch have so long been famous, also make a fine display, and include C. × Niobe, C. × microchilum, C. × Œnone, and many others. The rare Selenipedium Boissierianum, and the pretty hybrid derived from it and S. Schlimii album, called S. × Cleola, are also in flower.

Messrs. Charleworth, Shuttleworth, and Co., of Heaton, Bradford, have had a magnificent display of Cattleya labiata—it is said as many as seven thousand flowers—and the range of coloration is marvellous. Side by side with the recent introductions are two pieces of the old original plant from the Birchfield collection. Lælia tenebrosa, flowering from half-made growths, and Cattleya Dowiana aurea are also very beautiful. Oncidiums crispum and Forbesii are also very effective. Dendrobium Phalænopsis Schroederianum is making a brave show, with D. superbiens and bigibbum, while the chaste D. aqueum forms a very pretty contrast. Many other good things are in bloom, including Oncidium uniflorum, on a block, literally covered with flowers; the rare Odontoglossum Hennisii with a spike of thirteen flowers, &c., &c. The Odontoglossums promise a fine show in the spring.

Messrs. F. Sander and Co., St. Albans, have also a wonderful display of Cattleya labiata, in endless variety. Cypripedium insigne, too, is in great force, and shows a considerable range of variation, some of the montanum forms being especially good. The hybrids are also very numerous, and many well-known forms are in flower, together with some novelties of promise. A large number of other showy and interesting things are in flower in this extensive establishment.

CYPRIPEDIUM INSIGNE AT BRIDGE HALL, BURY.

We have received the following interesting communication from O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire :—

At the present time, although a dull season for Orchid-bloom, I have a grand display of flowers from my numerous plants of Cypripedium insigne. Upwards of three hundred and seventy blooms are now open, or on the point of opening, and the individual flowers are generally very large. Of three which I have measured one was five and a half inches from the apex of the dorsal sepal to the extreme point of the pouch, and the same length from point to point of the extended petals, while the two others measured four and a half inches each way.

The varieties, for the most part, are selected forms of the old Sylhet variety, but there are many plants of the choicer sorts, such as Chantini, punctato-violaceum, albo-marginatum, Maulei, Wiottii, Wallacei, and many fine forms of the more modern "montanum" varieties. Indeed, two of the last named are the most magnificent forms, both for size and colour, that I have ever seen.

I am very fond of this good, though somewhat old-fashioned Cypripede, and am hybridising it freely with the best kinds that require warmer treatment, as I am desirous of producing hybrids which will require cool treatment like the insigne parent.

My insignes are grown in two temperatures, the one ranging from about 70° Fahr. by day to 55° by night, and the other 5° lower day and night. They grow equally well in either temperature, but, of course, the blooms are father later under the cooler treatment. They are potted in crocks and fibrous peat, without a trace of sphagnum or charcoal in the compost.

O. O. WRIGLEY.

[We shall hope to hear again of the results of Mr. Wrigley's experiments. The attempt to introduce greater variety into cool-house Cypripediums is a praiseworthy one and deserves success, for we know of collections where Cypripedium insigne is grown in an ordinary greenhouse, and flowers regularly, and other kinds would be gladly introduced if only amenable to cool treatment. By sowing the seed and growing the young seedlings in the cool house, the hardier ones alone would presumably make headway and reach the flowering stage. We do not know if systematic experiments in this direction have before been tried. Half the seed might be sown in each of the two temperatures.—ED.]

HYBRID ORCHIDS.

THE great popularity to which Orchids have now attained is alone sufficient reason why such a journal as the ORCHID REVIEW is an absolute necessity. A want of general scientific principles, however, is another reason, and I have no doubt that the ORCHID REVIEW will greatly aid in solving the question of the "nomenclature of hybrids." I hope so; and the rules which you advocate appear to be all that is necessary, if loyally observed by all concerned.

The "History of Orchid Hybridisation" is capital, and greatly needed, and "The Hybridist" seems to be only a continuation of that work. May I suggest that "The Hybridist" should be a guidance to the hybridiser, in order that the result of his patience may be the production of a flower equal, if not superior in point of beauty, to the parents.

It is generally acknowledged that the majority of hybrids are inferior to one or the other of the parents, sometimes both, while a comparatively few are recognised as great successes, and perhaps many of these have been obtained haphazard. Has not the hybridisation of Orchids generally been carried on in the dark, without any other principle than that of getting a hybrid? If so, why should it continue so in the future, now that we have the ORCHID REVIEW? Could not good work be done in this direction if those having had experience could be induced to record the result of their observations? The beginner could then refer to what has been done in the past, and frame his footsteps accordingly. For instance, how to proceed in order to improve the sepals, petals, and lip, or the colour, shape, size, or any other special quality desired. Also whether the progency most frequently resemble the seed-bearing or pollen-producing parent, etc.

I think a collection of general ideas on the subject would be very interesting and useful, together with hints as to when to effect a cross, the best methods of bringing the seeds to perfection, and of securing healthy germination.

In addition to other seedlings which we have raised here, it may interest your readers to know that we have a healthy batch of about a dozen plants obtained by crossing Sobralia macrantha with the pollen of Cattleya gigas.

H. A. BURBERRY.

Highbury Gardens, Moor Green, Birmingham.

We shall be only too pleased to publish such notes as Mr. Burberry mentions, if our readers will kindly send the results of their experiments. It may be that in some cases the work has been carried on without any very definite guiding principles, but this can hardly be said of many of the crosses effected at the present day. In the early days of hybridisation everything had to be discovered, but now we can benefit by the experience of our pre-

decessors, though much of it is not on record in an accessible form. We will endeavour to give some additional facts in an early number.—Ed.]

CALENDAR OF OPERATIONS FOR DECEMBER.

By W. H. White, Burford, Dorking.

It is well known to all who have had experience in the cultivation of Orchids that abundance of light is indispensable to their well doing, and having now arrived at that period of the year when the least amount is at command, it becomes necessary to utilise it to the fullest extent. Immediately the large deciduous trees with which we are surrounded have cast off their leaves, we make it a practice to thoroughly wash all the houses, both inside and out. Here, where the atmosphere is nearly always clear, roof washing is only necessary once a year, but in the neighbourhood of large towns, where the atmosphere is charged with smoke, the houses will require more frequent cleansing on the outside.

Previous to re-arranging the collection, the plants should be carefully examined for any trace of insects, all dirt and dust sponged from the leaves, the pots washed—in fact, everything about the plants should be perfectly clean, for no plants present a more inviting appearance than Orchids where cleanliness and smart arrangement prevail. Orchid cleaning is tedious work, and only those who are interested in their welfare and have had some previous experience in the sponging of less valuable plants, should be trusted to clean the rare and choice varieties. It is no uncommon occurrence to see the leaves of such tender plants as Cypripedium bellatulum, niveum and concolor cracked, or those of Aërides, Vandas, Saccolabiums, etc., broken and split by careless and inexperienced workers, which disfigures the plants and causes much vexation to the grower, the damage being irreparable.

In some collections there are houses where, through an inefficient heating apparatus, or an inadequate supply of piping, the proper temperatures cannot be maintained during severe weather, except by continually driving the fires and keeping the pipes very hot, which is a great mistake, as Orchids quickly deteriorate under its dry dessicating influence. Unquestionably it is of the greatest importance that Orchid growers should have ample means of heating the houses at command, as by having the requisite quantity of piping in each house, and keeping it fairly warm, a far more balmy and congenial atmosphere can be maintained than when the heating apparatus is inefficient. To assist in keeping up the temperatures in very cold weather, and at the same time to economise fire-heat, some growers leave their blinds up all the winter, so that they may be lowered at night for this purpose. But when used in this manner it frequently happens that they are frozen so stiff that they cannot be pulled up until nine or ten o'clock, the plants thus losing the benefit of the light, which is of so much

importance to them. Another objection is that the blinds become wet and frozen so often, that in pulling them up and down they get badly torn in a very short time, and are quite unfit for use when the sunny days return. It is far more economical to take them off, and thoroughly dry and store them away in a dry place until wanted again. The best substitute which I know of for covering the houses in cold weather is good Archangel mats, the ends of which may be neatly tied, and several sewn together in different lengths, as required for each house. These may easily be rolled along the lower part of the roof, which is the coldest part of the structure, at dusk, and taken off again at daylight the next morning. They should be secured in windy weather, and if during the night they become wet or frozen, they should be thawed and thoroughly dried before using again.

In the East Indian house many of the Phalænopses are now pushing their flower-spikes, and will soon make a graceful and attractive display. The spikes should not be allowed to remain on too long, especially on small weakly plants, as nothing tends so much to weaken their constitution as over flowering. The safest plan with these smaller plants is to cut off the spikes immediately the terminal bud has opened. In and around London, where at this season dense sulphurous fogs frequently occur, causing such sad havoc with Phalænopsis flowers, the general practice is to cut off all the buds as they appear, and when the spike has become fully developed the top is pinched off, which causes it to send out a number of lateral shoots just below the part where the buds were taken off, these branchlets grow freely, and produce their lovely flowers in the early spring months, when there is less risk of fog. Some varieties, especially P. Lueddemanniana, frequently throw out young plants from the old flower stems, from which they may easily be propagated. The young plants should not be disturbed until they have formed at least two leaves and several roots, when they may be removed and placed in small pans or baskets. Or, if a fine specimen is required, peg them down around the parent plant, and when they have become established, separate them, leaving a short piece of the old stem attached.

I have frequently been asked by Orchid growers of late the question—Where and how do you find Eulophiella Elisabethæ do best? It is rather early yet to give accurate cultural directions, as this new and interesting plant has only been under our care for a short period, but I may state that we have plants growing very freely side by side with Phaius tuberculosus, and treated identically the same, as recommended on page 150 for that beautiful Orchid.

It will be observed that plants of Dendrobium Cambridgeanum are now starting into growth. They should therefore be placed in more heat, and as the new roots protrude from the base of the young bulb, it will be necessary to treat them with copious supplies of water. This species is best managed in baskets or pans, suspended in the East Indian house, and when in bloom

is always much admired. Those plants of D. Brymerianum and D. fimbriatum, that are still in the midst of their growth, must be kept in the hottest division, and be liberally watered until the bulbs are matured.

Such Dendrobiums as D. nobile, Linawianum, Wardianum, and crassinode, and the pretty garden hybrids, D. × Ainsworthii, D. × euosmum, D. × Cassiope, D. × Aspasia, D. × Wardiano-japonicum, D. × endocharis, and others, that have their flower buds showing, may now be brought from the cool greenhouse or vinery, where they have been resting, into a little extra warmth. The Cattleya or intermediate temperature will suit them admirably until the flower buds are fully developed, when they should be placed on the lightest side of the East Indian house, to bring their flowers to perfection. Every care must be taken at this stage not to over-dose the plants with water, or the young growths will start away, and the flower buds turn yellow and fall off. This particularly applies to D. Wardianum and D. crassinode. They only require water at long intervals, at present.

Among the Cattleyas that bloom in the late spring and early summer may be mentioned Cattleya Warneri. Plants of this species will now be showing signs of activity, both new growths and roots being pushing freely. They should now be placed at the warmest end of the Cattleya house, well elevated on inverted flower pots, to bring them as near the light as possible, and until growth is fully completed sufficient water should be given to keep the compost in a fairly moist condition. There are also other plants in this house which are in various stages of growth, such as Lælia crispa, L. purpurata, etc., which must be watered with care and discretion during the cold dull months before us. Of the long thin bulbed section, Lælia harpophylla will be growing fast, and some of the more forward are nearly finished up. These will at all times take plentiful supplies of water. When this species is completely at rest, it should be placed at the warmest and lightest part of the cool or Odontoglossum house.

In large and varied collections there will always be found some plants that require more pot room and fresh material to root into. Several Cœlogynes are now starting to grow, and may safely be repotted, as C. elata, Rossiana, sulphurea, and gramminifolia, each of which will grow well in the usual mixture of peat and sphagnum. Give them plenty of space to root in, and abundance of water whilst growing, in fact they should never be allowed to become quite dry. As regards temperature, the intermediate house will suit their requirements admirably.

An elegant and graceful Orchid when well bloomed is Platyclinis glumacea. This plant has for some time past been standing in a shady part of the intermediate house; here it should remain until the young growths commence to push up, when it should be placed in the warmest division and freely supplied with moisture, both at the root and overhead, which will help to keep down red spider, to which it is subject.

In nearly every garden where indoor plants are cultivated the old Cypripedium insigne will be found in bloom at this season. It has always been a general favourite amongst gardeners, owing to its vigorous constitution and easy culture, and as the handsome flowers remain fresh for a very long time, they are especially valuable for cutting and decorative purposes. At the present time there are a great number of C. insigne varieties in commerce, some of them better than others, and the best certainly deserve a place in the most select collections. In C. insigne Maulei and Chantini we have varieties that will take a lot of beating, but undoubtedly the most beautiful and distinct variety yet seen is C. insigne Sanderæ, which is, so far as at present known, only represented in three or four collections.

The best time to repot C. insigne is immediately after flowering. It requires no special kind of compost, as I have seen it well grown and flowered when potted like an ordinary stove or greenhouse plant, and it will thrive in almost any house where frost is excluded, proper attention being given in the matter of watering, etc.

Among the multitude of Cypripedium hybrids artificially raised in this country, C. × Leeanum, and its varieties superbum and giganteum, stand out conspicuously. These coming and flowering, as they do, at this season, are particularly welcome for brightening up the Orchid house. For this reason alone they should be grown in quantity. Like its parents, C. insigne and C. Spicerianum, it is a plant of easy culture, growing and flowering freely in the cool part of the intermediate house and deluged with water the whole year round.

ORCHID PORTRAITS.

GARDENERS' CHRONICLE.

CATTLEYA × CHLORIS. (See p. 339 of our last issue.)—Oct. 28th, p. 525, fig. 88.

CIRRHOPETALUM ORNATISSIMUM, Rchb. f. A handsome species which was awarded a First-class Certificate by the Royal Horticultural Society on October 24th, when exhibited by Sir Trevor Lawrence.—Nov. 4th, p. 553, fig. 91.

PAPHINIA GRANDIS, Rchb. f. The finest species in the genus.—Nov. 4th, pp. 560, 561, fig. 93.

CATTLEYA LABIATA, Lindl.—Nov. 11th, pp. 585, 594, fig. 96.

THE GARDEN.

LYCASTE CRUENTA, Lindl. A handsome yellow-flowered species misnamed "L. aromatica" on the plate.—Oct. 28th, p. 394, t. 933.

GARDENERS' MAGAZINE.

DISA × PREMIER. (See p. 339 of our last issue.)—Nov. 4th, p. 658, with figure.

ILLUSTRATION HORTICOLE.

CATTLEYA GUTTATA, Lindl., VAR. PERNAMBUCENSIS, Rod.—Vol. xl. p. 91. t. 184.

JOURNAL OF HORTICULTURE.

CYPRIPEDIUM × CHLONIUS. (See p. 374 of our present issue.)—Nov. 2nd, pp. 394, 395, fig. 59.

LÆLIO-CATTLEYA × PISANDRA. A handsome hybrid raised from Lælia crispa ♀ and Cattleya Eldorado ♂, by Messrs. Veitch, which received a First-class Certificate from the Royal Horticultural Society, on October 24th.—Nov. 2nd, pp. 394, 407, fig. 60.

CYPRIPEDIUM × STATTERIANUM. (See p. 373 of our present issue).—Nov. 9th, p. 417, fig. 61.

CATTLEYA × LORD ROTHSCHILD. A handsome hybrid raised by Messrs. F. Sander and Co., of St. Albans, from C. Gaskelliana ♀ and C. Dowiana aurea ♂, which received a First-class Certificate from the Royal Horticultural Society on October 24th.—Nov. 9th, pp. 417, 425, fig. 62.

LINDENIA.

ZYGOPETALUM GRANDIFLORUM, Hemsl. A remarkable species.—t. 393.

LYCASTE CINNABARINA, Rolfe. The handsome species described at page 303 of our October issue.—t. 394.

CATTLEYA VELUTINA, Rchb. f.—t. 395.

VANDA TRICOLOR, Lindl., VAR. HOVEÆ, L. Lind.—A handsome light-coloured variety.—t. 396.

CONTINENTAL NOTES.

By C. DE BOSSCHERE.

NOTWITHSTANDING the cold weather, some fine Orchids were exhibited at the Brussels Exhibition on November 12th, including about twenty magnificent varieties of Cattleya labiata from M. A. A. Peeters, and an interesting collection of Cypripediums from M. J. Moens. M. Jules Hye also sent a fine Odontoglossum × macrospilum, and Cypripedium × miniatum, a very pretty hybrid from C. Spicerianum ♀ and C. Fairieanum ♂.

At the Ghent meeting there was also a good display of showy things;

among which we may note—Cypripedium × Dauthieri Vervaetianum, a very fine form from Mm. Edm. Vervaet et Cie; a strong plant of Vanda cœrulea from M. Jules Hye, with two racemes of fifteen to twenty large and handsome flowers; a remarkable Cypripedium Haynaldianum from M. Jules de Cock, with twelve flowers, and others.

The Orchidéene, of Brussels, also held a very successful meeting. M. Bleu, of Paris, exhibited his handsome hybrids Lælia × juvenilis, Cattleya × Parthenia aurea, and Lælio-cattleya × amœna superba. M. Treyeran sent Lælia præstans of extraordinary size. Besides which, Messrs. Linden, M. A. Vanimschoot, and others sent some showy things.

In the houses of M. A. Van Imschoot, of Ghent, are many interesting rarities of various kinds, and at the Horticulture Internationale a splendid display of the old Cattleya labiata—nearly a thousand flowers in a single house, besides many other fine things.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

By John Weathers.

The display on October 24th was an exceedingly fine one, its predominating feature being, without doubt, the fine masses of Cattleya labiata brought from all parts.

Sir Trevor Lawrence, Bart., President R.H.S., exhibited a strong plant of Cirrhopetalum ornatissimum, which gained a First-class Certificate on account of its beauty. Cypripedium × conco-Lawre was again shown.

W. M. Appleton, Esq., F.R.H.S., Tyn-y-Coed, Weston-super-Mare, received an Award of Merit for his beautiful rose-and-white variety of Dendrobium Phalænopsis, and also for Cattleya labiata, in addition to which he sent a fine C × Hardyana.

J. T. Bennett-Poë, Esq., F.R.H.S., Holmewood, Cheshunt, exhibited a chaste variety of Odontoglossum Rossii majus.

A Silver Gilt Banksian medal was won by Messrs. Charlesworth, Shuttleworth and Co., Heaton, Bradford, who staged a fine group of Cattleya labiata, C. Schofieldiana, Oncidium undulatum and the new Cypripedium Charlesworthii.

Walter C. Clark, Esq., F.R.H.S., Orleans House, Sefton Park, Liverpool, exhibited Cattleya labiata and Cypripedium insigne Clarkei, which latter received an Award of Merit, being a beautiful and distinct form.

Mrs. H. Grinling, F.R.H.S., Harrow Weald House, Stanmore, Middlesex (gr. Mr. W. Rapley), exhibited four strong plants of Cypripedium insigne.

Messrs. Heath and Son, Cheltenham, obtained an Award of Merit for a beautiful soft greenish-yellow Cypripedium insigne albens, the upper sepal

of which was of a pure white from the middle upwards. Lælia × Euterpe (L. crispa ♀ × L. pumila Dayana ♂), a hybrid with beautiful purple lip, was also shown.

Messrs. J. Laing and Sons, of Forest Hill, exhibited, among a large group of ornamental stove and greenhouse plants, several Cattleya labiata, Oncidium Forbesii, Dendrobium Phalænopsis Schrœderianum, Cypripedium Spicerianum, and Pleione Lagenaria.

A Silver Banksian medal was granted to Messrs. Lewis and Co., Southgate, N., for a group, in which Cattleya labiata, Lælia × elegans, L. Perrinii, Oncidium crispum, and O. ornithorrhynchum were chiefly noticeable.

Messrs. Linden, Parc Leopold, Brussels, again exhibited a large collection, containing some remarkable things. Among them were Cattleya Warocqueana Imschootiana, and Paphinia cristata, each of which received an Award of Merit. A Botanical Certificate was given to the beautiful sweet-scented Pholidota convallarioides (a most appropriate specific name!), and also to the remarkable Dendrobium lamellatum, with broad flat pseudobulbs and creamy flowers. Besides these may be mentioned Odontoglossum Mooreanum (doubtless a natural hybrid between O. polyxanthum and O. tripudians), and Maxillaria callichroma with large white and golden flowers.

H. Little, Esq., The Barons, Twickenham, exhibited Cattleya labiata, Cypripedium × Lemoinerianum, and C. Rothschildianum (to which the name Nicholsianum was attached).

Messrs. Hugh Low and Co., Clapton, received a Silver Bahksian medal for a collection both large and beautiful, and containing several Cattleyas including C. Bowringiana; Phalænopsis denticulata, the flowers pale yellow with brown transverse bars; several forms of Cypripedium bellatulum, C. Haynaldianum, etc.

G. D. Owen, Esq., F.R.H.S., Selwood, Rotherham (gr. Mr. M. Watts), exhibited Cattleya labiata alba, and the beautiful Selwood variety of Cattleya × Hardyana, which received an Award of Merit.

G. J. Poston, Esq., F.R.H.S., Bishopsford, Mitcham, exhibited a fine Cattleya Bowringiana, and a beautiful mauve-lilac form which I believe is know as var. lilacina.

A Silver Flora Medal was the award to Messrs. F. Sander and Co., St. Albans, for a group in which the new Cattleya × Lord Rothschild (C. Gaskelliana ♀ × C. Dowiana aurea), and the deep purple C. labiata Sanderiana each obtained a First-class Certificate.

Thomas Statter, Esq., F.R.H.S., Stand Hall, Whitefield, Manchester, exhibited a deep rose-purple sepalled and dark brown lipped Cypripedium × Statterianum (C. Spicerianum magnificum ♀ × C. × vexillarium superbum ♂), which received a First-class Certificate.

Messrs. J. Veitch and Sons, King's Road, Chelsea, exhibited a large group, for which a Silver Gilt Banksian medal was awarded. A First-class

Certificate was given to the remarkably fine Selenipedium × Clonius (S. conchiferum ♀ × Uropedium Lindeni ♂), with a large chaste lip and long tapering petals. Lælio-cattleya × Pisandra (L. crispa ♀ × C. Eldorado ♂), received a similar award. The plant bore three large and beautiful rose-purple flowers, the lips of which were of an intense velvety purple. Besides these may be mentioned L.-C. × Cassiope (L. pumila ♀ × C. × exoniensis ♂), L.-C. × Eumæa (C. Trianæ ♀ × L. majalis ♂), the noble Cattleya × Harrisii (C. Leopoldi ♀ × C. Mendeli ♂), the rich purple and white Cypripedium T. B. Haywood, the greenish Selenipedium Boissierianum, as well as several Oncidiums.

The meeting held on November 14th was a very successful one, in spite of the damp and foggy weather which prevailed. A large number of Orchids were staged, and five Medals were awarded for good collections, most of which contained fine forms of Cattleya labiata, Cypripedium insigne, C. Spicerianum, C. × Leeanum, and some others. Hybrid Cypripediums, as usual, were present in force.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. Chapman), received a Silver Flora Medal for a very fine group, comprising the beautiful Cypripedium insigne Sanderæ, the very similar variety Ernesti, C. i. radiatum, the dorsal sepal unspotted but rayed with light purple-brown near the base, and the Cambridge Lodge variety, with large spots; also C. Exul and C. Argus. Of the hybrids we may mention—C. × Indra (C. callosum ♀ × C. villosum ♂), C. × Carrierei (C. venustum ♀ × C. superbiens ♂), C. × Celeus (C. insigne Chantini ♀ × C. villosum ♂), C. × Bellona (C. villosum ♀ × C. × Spicerianum ♂), C. × T. B. Haywood, etc., also a variety of other interesting and showy Orchids.

Messrs. F. Sander and Co., St. Albans, also staged a fine group, for which a Silver Medal was awarded. It contained a fine lot of Cattleya labiata, several plants of Calanthe × Victoria-Reginæ, the white C. × Cooksoni, C. × Sandhurstiana, Restrepia antennifera, Cypripedium Chamberlainianum, C. × Burberryana (C. Boxallii ♀ × C. × plunerum ♂), a fine dark form, C. × Joseph Donat (C. × Ashburtoniæ ♀ × C. Spicerianum ♂), C. × Alcides superbum, with much spotted dorsal sepal, C. × Leeanum James Hamilton, a fine form which received an Award of Merit, C. × picturatum, etc., a pretty dark form of Odontoglossum Rossii, called rosaceum, Dendrobium Fairfaxii, and many other good things.

Messrs. B. S. Williams and Son, Upper Holloway, also received a Silver Flora Medal for an effective group, including the charming Comparettia macroplectron, Odontoglossum Harryanum, varieties of Lycaste Skinneri, a large number of hybrid Cypripediums, etc.

Messrs. Hugh Low and Co., Clapton, staged an interesting group, which received a Silver Banksian Medal. It included a plant of the beautiful Cattleya × Massaiana with a raceme of three flowers; the remarkable

Stanhopea Lowii, which received an Award of Merit; Miltonia Roezlii, Cynorchis Lowii, Cypripedium bellatulum, Lælia purpurata Russelliana, and others.

Messrs. W. L. Lewis and Co., Southgate, also received a Silver Banksian Medal for an effective group, which included Cattleya maxima, C. Bowringiana, C. Warscewiczii, Cynorchis grandiflora, Trichosma suavis, the rare Dendrobium Palpebræ, D. Phalænopsis Schroederianum, various Cypripediums, etc.

Messrs. James Veitch and Sons, Chelsea, exhibited their fine new Læliocattleya × Statteriana, which received a First-class Certificate, the superb L.-c. × Pallas, Cypripedium × Euryades (C. × Leeanum ♀ × C. Boxallii ♂) C. × Œnone, C. × T. B. Haywood, C. × microchilum, and others.

J. Foster Alcock, Esq., Northchurch, Berkhampstead, exhibited a plant of Odontoglossum × Wilckeanum.

E. Ashworth, Esq., Harefield Hall, Wilmslow, received an Award of Merit for Cypripedium × Ashworthiæ, said to have been derived from C. × Leeanum superbum ♀ and C. × selligerum majus ♂, which was like a fine form of the former, there being scarcely a trace of the influence of the pollen parent.

Frederick M. Burton, Esq., Highfield, Gainsborough, showed Cypripedium × suffusum (C. Lowii ♀ × C. Hookeræ ♂), C. × enfieldense, and two others.

Walter C. Clark, Esq., Orleans House, Sefton Park, Liverpool, exhibited Cypripedium × Wallaertianum aureum, and C. × Harri-Leeanum (C. Harrisianum superbum ♀ × C. × Leeanum superbum ♂).

Lord Cowper, Panshanger, Hertford (gr. Mr. Fitt), exhibited Cypripedium × Leeanum and a plant from the same seed-pod very similar to C. Spiceri-anum.

G. Hardy, Esq., Timperley, Cheshire (gr. Mr. Holmes), sent spikes of Cattleya labiata and Lælia anceps.

G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Manchester, showed a fine pan of Pleione maculata alba with a dozen flowers, which received an Award of Merit.

F. S. Moseley, Esq., of West Strand, exhibited Cattleya Dormaniana.

T. Statter, Esq., Stand Hall, Manchester (gr. Mr. Johnson), exhibited a very fine and showy Cypripedium × southgatense (C. bellatulum ♀ × C. × Harrisianum ♂), which was awarded a First-class Certificate, C. × Swinburnei, Stand Hall variety, an improved form which received an Award of Merit, C. × Adriadne (C. Spicerianum ♀ × C. × selligerum majus ♂), the dark C. × rubescens (C. × œnanthum superbum ♀ × C. Boxallii ♂), and a spike of Lælia tenebrosa.

E. H. Woodhall, Esq., St. Nicholas House, Scarborough, sent a fine plant of Cypripedium insigne albo-purpureum.

CORRESPONDENCE, &c.

H. J. Ross, Esq, Florence, Italy, sends a very fine Cypripedium callosum, under the varietal name of Rossianum. Cypripedium Volonteanum, we believe, is only a local variety of C. Hookeræ, and has been described as such. Mr. Ross purchased a lot of several plants at Protheroe and Morris's Rooms, in March, 1891, and states that one proved to be C. Hookeræ, but all the rest C. Bullenianum. We do not know if the two grow intermixed.

In the Burford collection is a fine plant of Selenipedium Schlimii, now bearing thirteen spikes, several of them branched ones, and numerous flowers; also Vanda Amesiana with seven spikes, Cattleya Dormaniana with seven flowers; a very fine Cypripedium × œnanthum superbum with eight flowers, and C. × Niobe with four. Eulophia maculata and the rare Dendrobium cymbidioides are also in flower.

Mr. W. Hough, gr. to M. Lambarde, Esq., Beechmont, Sevenoaks, sends a flower of a handsome Cattleya which was purchased as C. Dowiana. It is a form of C. × Hardyana, almost identical in shape with the species just named, but the sepals are beautifully veined, suffused and mottled with rosy purple. The lip is very deeply coloured, but less veined than in C. Dowiana. Thus it chiefly approaches C. Warscewiczii, the other parent, in colour. The forms of this superb natural hybrid are becoming rather numerous.

J. T., Ashford. The cause of the bulbs of Miltonia vexillaria rotting may have been over-watering when the plants were at rest.

An exceptionally fine form of Vanda cœrulea comes from T. R. Watt, Esq., with flowers nearly four inches in diameter, beautifully reticulated with deep blue. It is one of Burmese forms imported by Messrs. Hugh Low and Co.

Lælia tenebrosa, Little's variety, from the collection of H. Little, Esq., of Twickenham, is a fine large form, with flowers seven inches across, and the sepals and petals quite horizontal. The colour is about typical.

Errata.

P. 351. Cypripedium × amandum was derived from C. insigne and C. venustum.

P. 352. Cypripedium Fairieanum was the pollen parent of C. × Arthurianum pulchellum.

TO OUR READERS.

When, a year ago, we announced our intention to publish an illustrated monthly journal devoted entirely to Orchids, we received a large number of letters of good wishes and promises of support; in some cases from quite unknown correspondents. The programme announced at the outset has been steadily adhered to, so far as circumstances permitted, and with the present number we complete our first volume. We desire to thank our numerous readers and correspondents for the support and assistance which in various ways they have accorded us, and at the same time solicit a continuance of their sympathy and support in the future. We would particularly request them to make the work as widely known as possible, and obtain additional subscribers, for with increased support we should be able to introduce improvements in the work. The success hitherto attained has been particularly gratifying, but we wish to make the work progressive in the fullest sense. Our programme for the future contains many attractive and important features, and no effort shall be wanting on our part to make the work both interesting and useful to all lovers of these charming plants.

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